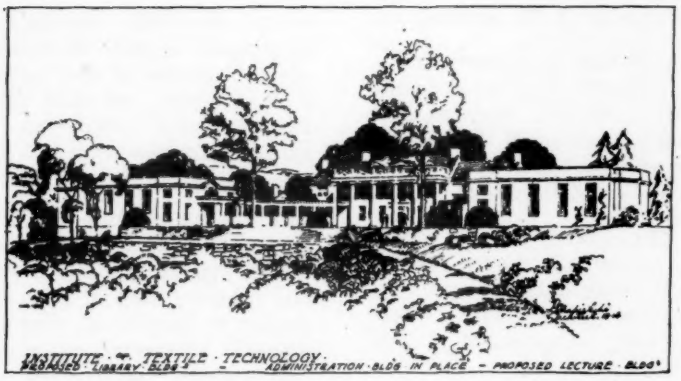
Textile Technology Digest



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ABSTRACTS

I. ORGANIC FIBERS

I, 1. Vegetable

FLAX STRAW. Jean F. Couchman. *Fibers, Fabrics and Cordage 12,* 48-9, 51 (Feb. 1945). Ripening of flax straw causes changes in the hemicellulose constituents whereby they become more resistant to retting. Hence, over-matured straw produces harsh, dry, low grade fiber with a high hemicellulose content.

JUTE. S. A. G. Caldwell. *Dyer & Textile Printer 93,* 229-31 (March 16, 1945). Scarcity of linen has led to the use of jute as linings in clothing, and jute embroidery cloth has proved to be a satisfactory substitute for linen. Loss of weft strength in bleaching is a problem which is at least partially overcome in chlorite.

JUTE CELLULOSE. B. P. Ridge, A. H. Little and J. Wharton, imperial Chemical Industries Ltd. *J. Textile Inst. 35,* T93-116 (Aug. 1944). Relations of jute incrustants to fiber strength and yarn strength depend in part on methods of removing the lignin and hemicellulose incrustants. Though these components have little or no strength they contribute to strength by their cementing action and by protecting the fiber from oxidation in bleaching baths. Browning of bleached jute in sunlight can be prevented only by thorough lignin removal.

LINT CHARACTER. Sprinagabhushana, Sri Krishnarajendra Silver Jubilee Technological Institute. *Indian Textile J. 55,* 38-42 (Oct. 1944). Frequency distributions and frequency constants are presented in numerical tables for boll content, seed weight, lint index and ginning percentage of Broach Desi 8 (BD 8) cotton. Fiber uniformity has been improved by plant selection and further improvements in the direction of staple length and ginning yield are believed possible.

NORTH CAROLINA COTTON. Malcolm E. Campbell, North Carolina State College. *Am. Wool & Cotton Reptr. 59,* No. 6, 29, 31 (Feb. 8, 1945). Much of the cotton grown in North Carolina is not of high quality for its staple length. It is important that the grade should be raised but the present staple length is satisfactory. The "one variety community" program is aimed in the right direction but is still far short of its goal.

RAMIE YARN. Mark Sabner. USP 2 371 573, March 13. Ramie fiber is subjected to repeated alkali boiling, pressing and washing until not more than 2% of the original gum remains, and is then combed and spun into yarn.

ANATOMICAL STUDIES ON JUTE (CORCHORUS) WITH SPECIAL REFERENCE TO THE FORMATION OF FIBER. Agricultural Research Memoir No. 1, Indian Central Jute Committee, 1944; price 2s.
Reviewed in *Indian Textile J. 55,* 131 (Nov. 1944).

EFFECT OF STORAGE UNDER CERTAIN SPECIFIED CONDITIONS ON THE QUALITY OF INDIAN COTTONS. Nazir Ahmad and A. N. Gulati Technological Bull. B31, Indian Central Cotton Committee, Bombay, 1944; 21 pp.; price 1 rupee.

RELATIONSHIPS BETWEEN PROPERTIES OF COTTON FIBERS AND STRENGTH OF CARDED YARNS: PRELIMINARY REPORT. Robert W. Webb and Howard B. Richardson. Office of Marketing Services, War Food Administration, USDA. Washington, March 1945; 58 pp.

RESULTS OF FIBER AND SPINNING TESTS OF SOME COTTONS GROWN IN ARIZONA, CALIFORNIA AND NEW MEXICO FROM 1943 TO JULY 1944. Office of Distribution, War Food Administration, USDA, Washington, 1944; gratis.

TENSILE STRENGTH OF YUCCA FIBERS. C. W. Botkin and L. B. Shires. Tech. Bull. 316, New Mexico Agr. Expt. Station, State College, New Mexico, 1944; 30 pp.

I, 2. Animal

PROCESSING WOOL. Anon. *Am. Wool & Cotton Reptr. 59,* No. 4, 11-12, 50-1 (Jan. 25, 1945). Types of wool are briefly reviewed as to lengths, diameter and other grading characteristics, and wools are compared with mohair and other animal hair products. Methods of scouring, degreasing and carbonizing are also reviewed.

DEGREASING WOOL. Harry S. Drum and Alfred Hopkins (to Smith, Drum & Co.). Can. P. 425 862, Feb. 27. Oil and dirt are removed from raw wool by splashing a mat of the wool with a suitable solvent in a treating chamber in which the wool is prevented from packing as it traverses the chamber from inlet to outlet.

DEGUMMING SILK. Ben W. Rowland and Douglas Fronmuller (to Institute of Paper Chemistry). Can. P. 425 968, March 6. Silk is degummed by agitation in a hot bath containing sufficient inorganic acid and buffers to maintain the pH between 1 and 2.9; this is preceded by an acid rinse at pH 2.5-5.5 and an oil emulsion bath at pH 3-5.8.

I, 3. Artificial (derived from natural products)

I, 3a. Cellulosic rayons

CELLULOSE VISCOSITY. C. H. Bayley, Nat'l Research Laboratories, Ottawa. *Can. Textile J. 62,* No. 4, 36, 38, 50 (Feb. 23, 1945). In measuring the cuprammonium viscosity of cotton or of regenerated cellulose rayons it was formerly believed that traces of air in the solution decreased viscosity by oxidizing the cellulose. While it is true that exposure to light appreciably decreases viscosity the accuracy of the determination is not impaired by exposure to air in small amounts.

NITROCELLULOSES. Gunnar Hambraeus and Bengt Ranby. Univ. of Uppsala. *Nature 155,* 200-1 (Feb. 17, 1945). Electron microscope studies of precipitates formed by adding water to nitrocellulose solutions in acetone show that the structure is largely amorphous when degree of polymerization (DP) is very high (over 5000). Lower polymers (DP up to 1000) tend more to micellar structure. The nitrocelluloses were derived from sulfite pulp, sulfate pulp and Russian cotton linters.

NOMENCLATURE. Anon. *J. Textile Inst. 35,* P114-7 (Oct. 1944). The Committee on Textile Terms and Definitions of the Textile Institute has released approved definitions of some textile terms. Use of "rayon" as a generic term for all man-made fibers is discussed.

RAYON STAPLE. Fletcher S. Culpepper, Am. Viscose Corp. *Textile Age 9,* No. 2, 38, 40, 42, 44 (Feb. 1945). Temperature control and care in blending are essential factors in processing rayon staple on the cotton system of textile machinery. Longer staple increases strength within certain limits but the optimum length is not the same for all deniers. It varies from about 1.5″ to 3″ as the fiber becomes coarser.

RAYON STAPLE. R. J. McConnell, Whitin Machine Works. *Can. Textile J. 62,* No. 3, 34, 36, 44-5 (Feb. 9, 1945). Modern improvements in opening, picking, carding, drawing, fly-frame and spinning machinery make it possible to handle long staple fiber from rayon or from other artificial or synthetic fibers or their blends. Numerous special effects can be obtained in this way. The high speed automatic quiller greatly decreased rewinding costs and will probably also modify the type of spinning machinery specified in the future for quilling yarns.

RAYON STRUCTURE. Frank Howlett; Frank Howlett, Eric Minshall and Alex R. Urquhart, British Cotton Industry Research Assoc'n. *J. Textile Inst. 35,* T123-32; T133-68 (Nov., Dec. 1944). Swelling of cellulose has been studied in pure and aqueous (80%) pyridine using regenerated (viscose) cellulose, and several rayons, of which Tenasco is most resistant to subsequent acetylation. Several celluloses and secondary cellulose acetates were acetylated and deacetylated under nondegradative conditions. Structural studies were made by the viscometric method (acetate solutions in pyridine, dioxan, m-cresol, $CHCl_3$, CH_2Cl_2:EtOH (70:30) and acetone. Chain lengths ranged from 108 for the lowest to 595 for the highest fraction of Seraceta (cellulose acetate). Oxidation of Seraceta decreased chain length to 102 (lowest fraction) and 330 (highest fraction).

CELLULOSE PRODUCTS. James E. Kirby (to E. I. du Pont de Nemours & Co.). USP 2 371 052, March 6. A regenerated cellulose product in shaped form is obtained from a solution of a cellulose derivative in an inert solvent containing an azo compound and a coupling ingredient which is a dispersed resin.

CELLULOSE SOLUTION. Richard S. Shutt (to Battelle Memorial Institute). USP 2 371 359, March 13. Solutions containing at least 5% cellulose for extrusion into a bath to form shaped products of regenerated cellulose are prepared by dissolving cellulose in an aqueous solution (at least 27%) of a trialkylsulfonium hydroxide such as di-n-butylethylsulfonium hydroxide.

DRY SPINNING. Wm. I. Taylor and Wm. Pool (to Henry Dreyfus). Can. P. 426 289, March 20. Dry or evaporative spinning of acetate rayon is started by means of a jet of liquid.

FOILS. Emil Czapek. USP 2 371 155, March 13. Regenerated cellulose foils are formed on an endless belt by pouring a cellulose solution on the belt, treating it with coagulating and regenerating liquid and stripping the foil from the belt.

LINING. Geo. Schneider (to Camille Dreyfus). Can. P. 426 031, March 6. A resilient lining material is made by mixing nonfibrous regenerated cellulose particles (from acetate) with glycerol and a binder which may be an acetone solution of cellulose acetate.

PRESSURE SEAL. George Schneider and Mervin E. Martin (to Celanese Corp. of Am.). USP 2 371 710, March 20. A pressure seal is formed from a contact sheet of wood pulp cellulose containing an aqueous solution of glycerol or diethylene glycol. The facing foil is made of an organic cellulose derivative.

RAYON. Wanda K. Farr (to Chemical Foundation, Inc.). USP 2 371 233, March 13. Cotton cellulose for use in making viscose rayon is extracted (before alkalization) with 1% HNO_3 to remove the cutin-like component.

TREATING RAYON. Paul M. Cole and Alvin Lodge (to Am. Viscose Corp.). USP 2 371 579, March 13. Treating rayon filaments by passing them into a stream of superheated liquid in a pressure vessel and cooling the liquid just before the exit opening.

PROCESSING OF RAYOLANDA. Courtaulds Ltd., Coventry England, 1944.

Abstracted in *Dyer & Textile Printer 93,* 153-5, 207-9, 233-5 (Feb. 16, March 2 and March 16, 1945).

I, 3b. Protein fibers

ARDIL. Anon. *Silk & Rayon 19,* 30-1, 99 (Jan. 1945). Ardil, the new fabric has been given preliminary trials by the Bradford Technical College and larger scale trials by several coöperating textile mills and finishers to test the suitability of the fiber as a substitute for wool in worsted yarns and in woven fabrics. Some blends with viscose rayon have also been prepared.

ARDIL. David Traill, Imperial Chemical Industries Ltd. *Textile Mfr. 71,* 71-3 (Feb. 1945). The story of ardil as a new protein fiber is related. The appearance, dimensional stability, water absorption, melting behavior, wear resistance, thermal insulating power, mothproofness and dyeing properties of ardil are briefly discussed. Processing has been carried out successfully in the worsted, woollen and cotton systems of machinery, blends with wool are particularly useful but blends with other fibers such as viscose rayon are also produced. The new fiber was developed at the Ardeer Works of Imperial Chemical Industries.

I, 4. Synthetic

SYNTHETIC FIBERS. Rene Bouvet, Am. Viscose Corp. *Am. Wool & Cotton Reptr. 59,* No. 6, 57, 59, 61, 62 (Feb. 8, 1945). The probable effects of recent new fibers on future fabrics will be governed largely by consumer desire, resulting more in continuous and gradual changes than in sudden and violent fluctuation. Fibers can be made to specification in fineness, cross sectional shape, area and structure (solid, hollow or circular).

EXTRUDED FILAMENTS. Henry Dreyfus (to Cellulose Corp of Am.). USP 2 370 721, March 6. Filaments are formed by extruding a hot thermoplastic melt under the surface of a hot nonsolvent liquid in which even the feed pump is immersed.

SYNTHETIC FIBERS. Maurice Spertus (to Spertus Processes, Inc.). USP 2 371 075, March 6. Filaments are drawn from a solid piece of synthetic thermoplastic by melting a small portion against a hot surface and drawing the hot surface away from the solid piece.

SMOOTH MONOFILS. Am. Viscose Corp. Brit. P. 561 772. Monofils with exceptional smoothness and polish are obtained from resins by a preliminary swelling or solvent treatment, followed by drying, fusion and polishing by abrasion.

I, 4a. Nylon type

ABSORBENT NYLON. Imperial Chemical

Industries Ltd. Brit. P. 562 370. Polyamides with good absorption capacity for water are made by melting together at least 2 linear polyamides one of which is water-soluble and the other water-insoluble.

NYLON. Gordon T. Vaala (to Canadian Industries Ltd.). Can. P. 425 942, Feb. 27. March 6. A nylon type polyamide and a phenol-formaldehyde resin are compounded together.

POLYAMIDE. Gordon T. Vaala (to Canadian Industries, Ltd.). Can. P. 425 813, Feb. 27. A nylon type polyamide product having an intrinsic viscosity of at least 0.4 is compounded with an ester such as diethoxyethyl phthalate.

NYLON YARN: ITS PROPERTIES AND ITS PROCESSES. British Nylon Spinners, Ltd., 1944.

Reviewed in *Silk & Rayon 19,* 102-3 (Jan. 1945).

I, 5. Applications as fibers (not in yarns or fabrics)

I, 5a. Insulation

VINYL INSULATION. Anon. *Plastics 2,* No. 1, 38-9, 110-1 (Jan. 1945). Many types of electric cables use vinylite insulation either for jackets or for primary insulation, thus making a cotton braid cover unnecessary. Vinylite may also be processed into compounds suitable for calendering on cloth.

I, 5b. Plastic filler

FIBER FILLERS. P. H. Mosher and J. B. Griffin (Monsanto Chem. Co.). *Modern Plastics 22,* No. 5, 43-8 (Feb. 1945). Strength data (flexing, compressive, impact and tensile) are presented for preformed fiber-resin products in which several varieties of paper pulp and a blend of asbestos with glass fiber were employed as fibrous fillers. Better dispersed resin products gave the best results with respect to tensile, flexing and impact strength; the water-soluble resin system was superior as to edgewise compressive strength and water absorption.

I, 5c. Coated or impregnated products

RESINS ON FIBERS. D. H. Powers, Monsanto Chemical Co. *Ind. Eng. Chem. 37,* 188-93 (Feb. 1945). In the impregnation of cellulosic and protein fibers with urea-melamine and phenol-formaldehyde resins fiber swelling is essential to thorough penetration. The resin ingredients have little effect on cellulosic fiber properties until the resin is cured within the fiber. On wool there is no evidence that these resins react with the wool protein. The medium in which the resin ingredients are applied is extremely important to the final result.

II. INORGANIC FIBERS

II, 1. Natural

GLASS FIBER. Hans Steinbock. USP 2 371

933, March 20 (vested in the Alien Property Custodian). A binder and lubricant for glass fiber thread contains 3-5% each of a fatty acid sulphonate, gelatin and an emulsifiable oil, fat or wax which serves as a lubricant.

GLASS FIBER. Harrison P. Hood (to Fiberglas Canada, Ltd.). Can. P. 426 246, March 20. Silica is converted into the fibers by melting an alkali metal silicate forming it into fibers and hydrolyzing in solution with an acid solution, then heating the washed fibers at 1400-1500°C until they are vitreous.

GLASS FIBER PRODUCTS. Robert W. Auxier (to Westinghouse Electric & Mfg. Co.). USP 2 372 048, March 20. A molded laminate is formed from layers of glass fiber fabric, sized with starch and coated with 3-12% of an oil modified phenolic resin, the whole assembly being bonded with a thermosetting phenolic resin.

II, 3. Applications as fibers

II, 3c. Coated or impregnated products

GLASS FIBER. Allen L. Simison (to Fiberglas Canada, Ltd.). Can. P. 426 112, March 13. Strands of glass fiber are coated with a molten wax under such conditions that the wax solidifies within a small fraction of a second and is no longer molten when the strands reach the package on which they are being wound.

MINERAL WOOL. Joseph H. Zettel (to Johns-Manville Corp.). Can. P. 425 844, Feb. 27. Blankets of felted mineral wool are made from a thin loosely felted layer of fiber and a thermoplastic binder disseminated throughout the fiber layer.

III. NONFIBROUS MATERIALS

III, 1. Plastics, resins, rubber

ADVANCES IN PLASTICS. G. M. Kline, Nat'l Bureau of Standards. *Modern Plastics 22,* No. 5, 1-4, 67-70 (Jan. 1945). A review for 1944, with bibliography (249 references).

PLASTICIZERS. Leonard F. Pinto. *Plastics 2,* No. 1, 24, 26, 28-9, 104-7 (Jan. 1945). Charts are presented as guides to the choice of plasticizers for a wide variety of cellulose derivatives and synthetic resins and for a wide range of uses. By calendering a highly plasticized copolymer resin, an extremely flexible but tough film is obtained which is useful for raincoats, umbrellas, shower curtains, sports jackets and many other articles.

PLIOFLEX. Anon. *Indian Textile J. 55,* 46 (Oct. 1944). Plioflex is an elastic plastic, the first which can be vulcanized during the molding operation. It shows promise of eliminating fabric from garden hose since it does not crack in sunlight and needs no fabric support. On the other hand

it is useful as a coating for fabric and is expected to have many uses in luggage, raincoats, wall covering, draperies, book bindings, insulated wire and the like.

TESTING PLASTICS. J. R. Tucker, U. S. Testing Co. *Plastics 2,* No. 1, 34, 78, 80, 82 (Jan. 1945). Several mechanical, electric and thermal tests are described and illustrated for synthetic resins, cellulose derivatives, laminates and products made therefrom.

FOUNDATION GARMENT. Katherine K. Smythe. USP 2 372 133, March 20. A foundation garment without stays has a lower front panel of still open mesh thermoplastic fabric which flexes without stretching and an upper panel of woven fabric with stiff vertical threads and elastic crosswise threads.

NON-METALLIC BASIC MATERIALS. Bulletin GF44, Continental-Diamond Fiber Co., Newark, Del. 1944.

Reviewed in *Plastics 2,* No. 1, 99-100 (Jan. 1945).

POLYVINYL CHLORIDE COMPOUNDS FOR INSULATING AND FOR SHEATHING ELECTRIC CABLES. Govt. Dept. Electrical Specification 18, 1944; Addendum (Supplementary Notes on the Hot Penetration Test), Oct. 1944; price 3d (addendum, 2d).

III, 1a. Cellulose derivatives

CELLULOSE ESTER SHEETS. T. S. Lawton, Jr. and H. K. Nason, Monsanto Chemical Co. *Modern Plastics 22,* No. 5, 45-50, 62 (Jan. 1945). Effects of outdoor aging on the tensile strength elongation and yield stress of cellulose acetate and nitro-cellulose have been measured in a study of atmospheric environment on sheet plastics made of cellulose derivatives. Aging decreases impact strength and increases haze and shrinkage. There is also an increase in transparency to light, probably due to a bleaching effect. Most of the degradation in the cellulose derivatives occurs on the surface, but penetration deepens as exposure time increases. A year's exposure in Florida has about the same effect as 15 months in Massachusetts.

PLASTICS FROM WOOD. Robert A. Hardin, Univ. of Oklahoma. *Southern Power and Industry 63,* No. 3, 86-9 (March 1945). Cellulosic plastics are derived not only from cotton linters but from wood. Wood flour is a common filler in synthetic resin plastics; formaldehyde for aldehyde resin was formerly made from wood alcohol but is now mostly synthetic; acetic acid for cellulose acetate is a wood distillation product but is now also largely derived by synthesis; and lignin from wood pulp is an excellent source of plastics. Instead of relying on paper mill by-products for lignin it can be made directly from Southern yellow pine sawdust at a moderate cost. Soft wood impregnated

with dimethylolurea can also be hot molded somewhat like synthetic resin plastics.

III, 1b. Polymer resins; natural resins

PLASTIC BANDAGES. Anon. *Modern Plastics 22,* No. 5, 26-7, 63 (Jan. 1945). Solutions of plasticized vinyl resins are successfully employed as direct skin dressings and as adhesives for gauze bandages in modern surgery.

RESIN-FIBER PRODUCT. Richard H. Cubberley (to The Patent and Licensing Corp.). Can. P. 425 853, Feb. 27. A hard dense resinous fiber product with high resistance to delamination is formed by impregnating sheets of felt or paper with a refined resin or other resin and joining a number of sheets together under heat and pressure.

III, 1c. Condensation polymer resins

FABRIC COATINGS. E. I. duPont de Nemours & Co. Brit. P. 562 091. Resin compositions which are useful as protective and decorative coatings on fabrics are made by heating a nylon-forming composition with a formaldehyde condensation product of thiourea or guinidine or a guinidine derivative in presence of an alcohol.

III, 1d. Rubbers and rubber derivatives

LAMINATED CONTAINER. George A. Moore (to Shellmar Products Co.). USP 2 370 680, March 6. A container is made from wax paper tubing and a laminated outer portion of paper and rubber hydrochloride foil. The seams are formed by heat sealing with the aid of a thermoplastic hot melt adhesive.

WIRE TIRE CORD. U. S. Rubber Co. Brit. P. 562 137. Firm bonding of rubber to wire in wire tire cord is obtained by coating the wire first with a raw rubber composition, twisting uncoated wire around the coated strands and vulcanizing under heat and pressure.

III, 2. Adhesives; gums; starches

GLYCEROL FOR TEXTILES. Georgia Leffingwell and Milton A. Lesser. *Am. Dyestuff Reptr. 34,* 123-4 (March 12, 1945). Uses of glycerol as an ingredient in textile chemicals and in sizes and printing paste are reviewed.

IV. FIBER TO YARN

IV, 1. Preparation for spinning

CARD CLOTHING. Anon. *Textile Recorder 62,* No. 742, 66 (Jan. 1945). Correct application of card clothing to cylinders and doffers is so important to the quality of card web that automatic mechanical application under controlled tension is a substantial advance. The Dronfield card mounting machine has the added advantage of a patented

slow driving power unit for rotating the cylinder or doffer at the correct speed and tension.

CARD SCREEN GAGE. Anon. *Saco-Lowell Bull. 17,* No. 1, 34 (Jan. 1945). Illustrated description of a new welded metal gage for setting card screens.

CARD STRIPPER. Anon. *Saco-Lowell Bull. 17,* No. 1, 10-12 (Jan. 1945). Cards equipped with the continuous stripper can produce a good quality of sliver as long as the stripper is correctly set and operated at the proper speed, with the wire on the cylinder kept reasonably sharp. Advantages of the continuous stripper include freedom from damaged card clothing and elimination of the dirt and dust ordinarily raised by card stripping.

CARD WEB. A. Varga and N. H. Chamberlain, Leeds Univ. *J. Textile Inst. 35,* T89-92 (July 1944). A photoelectric test for estimating regularity of fiber distribution in card webs is described and illustrated.

CARDING LONG STAPLE. Anon. *Saco-Lowell Bull. 17,* No. 1, 35-42 (Jan. 1945). The latest design in cards for carding long staple fiber is described and illustrated. There is much to be learned about carding long staple and research on the subject is in progress.

CARDROOM CANS. Wm. Tatham, Ltd. *Textile Weekly 35,* 172, 175 (Jan. 26, 1945). Use of 12 inch (instead of 9 inch) cans in the cardroom without introducing new coilers has been made possible by an improved and simplified method of altering existing coilers for use with the wider can. The resulting increase in capacity is 80% and large savings in cost are effected by the change.

RAISING CARD WIRE. Tomlinsons (Rochdale) Ltd. *Textile Mfr. 71,* 68-9 (Feb. 1945). An improved machine for raising card wire has been designed to permit control of the wire raising process under modern methods of mechanical control. The machine most in use in the wool industry is an 18-roll single acting machine whereas cotton mills mostly use a double acting machine with 24, 30 or 36 rolls.

SLIVER TESTER. C. H. Plummer, Chicopee Mfg. Corp. *Textile Research 15,* 10-14 (Jan. 1945). Improvements in the Saco-Lowell sliver tester by Chicopee Mfg. Corp. have greatly increased the applicability of this tester to research. With a 36" chart and a speed ratio of 1728:1 the characteristics of a complete can of sliver can be recorded; thus variability in sliver can be followed through an entire can.

CARDING FLAX. Aktiebolaget Svenska Textilverken. Brit. P. 562 253. A carding machine for producing a continuous web of undamaged cottonized flax fiber as an adhesion plate so that the fibers presented to the cylinder lie superficially on

the cylinder cover. A doffer comb takes off a continuous fiber web for conversion into sliver.

FLAX CARDING. J. P. Mackie (to J. Mackie & Sons, Ltd.). Brit. P. 561 447. A roll rejection device for forming rolls of flax, hemp or jute sliver as it comes from carding machines acts by displacing the front one of 2 lower rollers at the moment when the sliver roll is to be discharged.

FLAX SLIVER. J. P. Mackie (to J. Mackie & Sons, Ltd.). Brit. P. 562 295. An automatic doffer for sliver rolls on flax carding machines has a lever pivoted on the sliding carriage of the upper roll. The lever has an additional roll which rests against the sliver roll.

LAP EJECTION. J. P. Mackie (to J. Mackie & Sons, Ltd.). Brit. P. 562 048. A device for ejecting a roll of flax fiber from a carding machine without stopping the drive rolls. The machine has three drive rolls, one of which is caused to eject the fiber roll by downward pressure.

IV, 2. Spinning, doubling, twisting, winding

CARD SPEED. Virgil E. McDowell, Rosemary Mfg. Co. (chairman). *Am. Wool & Cotton Reptr. 59,* No. 3, 13-14 (Jan. 18, 1945). A panel discussion of higher card speed and drawing problems such as type of top rolls and speed of front rolls. Several mills have found that increasing card speed to 185 gives a cleaner stock with improved breaking strength.

RING FRAME. Anon. *Textile Mfr. 71,* 66-7 (Feb. 1945). A review of British patents 550 248, 563 079 and 563 898 covering improvements in compactness and cleaning of ring spinning frames; a half width accessible self cleaning ring frame and a builder motion applicable to any roving or cop wind.

ROVING FRAME. Anon. *Saco-Lowell Bull. 17,* No. 1, 43-50 (Jan. 1945). Illustrated description of the model FS-1 long staple roving frame covered by USP 2 323 882. The drafting assembly is described in detail, with photographs, and the working of the machine with various blends of wool, rayon, cotton and nylon is discussed.

ELASTIC FILAMENTS. Robert A. Gift, Jr. (to Filatex Corp.). Can. P. 426 248, March 20. In handling elastic filaments a supply roll of filaments is unwound at a constant rate by frictional contact. Tension is applied to the filaments leaving the supply roll to stretch nearly to its elongation at break.

SPINNING MACHINE. Alvin Lodge (to Am. Viscose Corp.). Can. P. 426 189, March 20. A preheated gas is distributed to the spinning region in a spinning machine by passing it in opposite directions to 2 adjacent channels which taper in the direction of flow, withdrawing a portion of the gas at adjacent points of both channels at intervals and

passing it through the corresponding spinning position.

UNWINDING YARN. Adrian J. L. Moritz, Jacobus G. Schoonderwoerd, Willem J. D. van Dobbenburgh and Paul W. Markwood (to Am. Enka Corp.). USP 2 370 746, March 6. An unwinding device for yarn is arranged to support hollow thread packages in nonrotating positions and tensioning the interior turns of yarn during the unwinding operation.

WINDING MACHINE. Charles F. Fitzgerald (to Shoe Machinery Corp.). USP 2 370 785, March 6. A bobbin winding machine has horizontal driven spindles controlled by a start-and-stop device, and a winding spindle covered by a guard which can be raised for inspection.

WINDING MACHINE. Everett H. Cobb (½ to Roscoe N. Stokes). USP 2 371 876, March 20. A filling winder has a thread guide and a rocking control device for controlling the traverse of the thread guide.

WINDING MACHINE. Howard E. Swift and Edward R. Davis (to Foster Machine Co.). USP 2 372 136, March 20. A winding device is adapted to swing away from a package spindle, as the thickness of the package increases the yarn speed is carried by a secondary guide while a primary guide is held in reciprocal motion at constant amplitude.

WINDING MACHINE. Walter Siegenthaler (to Maschinenfabrik Schärer). USP 2 370 922-3-4, March 6. A mechanism for unwinding different types of thread packages on a winding machine has a driven thread guide with a circular edge. A thread traverse drum for winding machines has 3 main drum parts with grooves around their periphery. Another improvement is a driven spool holder with a special clamping device.

YARN TENSION. John C. Bodansky (to Cocker Machine and Foundry Co.). USP 2 372 053, March 20. A yarn tensioning device has a pair of horizontal brackets one above the other, with aligned bearings and notched sectors concentric with the bearing aperatures. The yarn is passed around the opposite sides of a pair of rods one of which is arranged for rotating and axial movement in the aligned bearings of the brackets.

EFFICIENCY AS APPLIED TO COTTON SPINNING BUSINESS. W. E. Paulson, Bulletin 654, Agricultural Experiment Station, College Station, Texas, 1944; 39pp.

MODERN COTTON SPINNING AND DOUBLING. J Buckley, Platt Brothers & Co., Ltd., Oldham, England, with Howard and Bullough, Ltd.; price 7s 6d. Reviewed in *Textile Mfr. 71,* 61 (Feb. 1945).

SURAT 1027 A. L. F. AND A. R. KAMPALA,

BAILHONGAL JAYAWANT; A. R. KAMPALA HUBLI JAYAWANT 1941-44; BAGALKOTE JAYAWANT 1943-44; MIRAJ 1935-44; WESTERNS 1943-44; VIRAMGAM 1943-44; SIND M.4 (SAW-GINNED); A. R. KAMPALA, BAILHONGAL 1935-44; BROACH B. D. 8 1943-44; 289F (SAW-GINNED); A. R. KAMPALA, SURAT 1941-44; BIJAPUR 1933-44; PUNJAB-AMERICAN 4F 1929-44; P. A. 4F (BAHAWALPUR) 1943-44; VERUM 1940-44 AND C. P. No. 1 (1935-44); spinning test reports on carded and combed samples, and technological report on Umri Bani 1943-44. Indian Central Cotton Committee Technological Laboratory, 1944.

Cited in *Indian Textile J. 55,* 65 (Oct. 1944).

IV, 2a. Cotton; vegetable fibers

FLAX SPINNING. S. A. G. Caldwell. *Fibres, Fabrics & Cordage 12,* 11, 13 (Jan. 1945). A notable development in flax spinning has been the automatic spread board to work with the hackling machine to reduce production costs. Mechanical improvements in the preparing room have also cut down production costs.

SPINNING FLAX. Flaxman. *Textile Recorder 62,* No. 742, 49-50, 52 (Jan. 1945). A review of modifications which have been introduced in spinning flax yarns, including the dry spinning frame, automatic doffing, rove stop motion and slip draft mechanism.

IV, 2b. Wool; worsted

SPINNING WOOL. Overlooker. *Textile Recorder 62,* No. 742, 44 (Jan. 1945). Practical hints are offered on maintaining high efficiency of woolen spinning machinery. Efficiency in carding wool is shown by the quality of the resulting yarns and by the way in which the mules following the carding machine runs.

WORSTED SPINNING. S. Smith. *Textile Mfr. 71,* 19-20 (Jan. 1945). Technical considerations that should be followed in setting ratch and carrier positions for worsted spinning are discussed with relation to twist effects, fiber breakage and other factors. Settings are illustrated by drawing and photographs.

IV, 2d. Rayon

RAYON SPINNERETS. C. C. Downie. *Silk & Rayon 19,* 88-9, 91 (Jan. 1945). Tantalum makes excellent spinnerets for rayon manufacture but the art of making the correct perforations in the metal is difficult and requires a high degree of skill. Tantalum is highly resistant to corrosion and the perforations can be made with extreme precision.

SPINNING BUCKET. Am. Viscose Corp. Brit. P. 561,687. A cover locking device for use on spinning buckets used in collecting rayon filaments is automatically locked by centrifugal force when the bucket rotates.

IV, 2e. Winding

WINDING. Enos Lees. *Textile Weekly 35,* 120, 126 (Jan. 19, 1945). Correct winding governs to some extent the efficiency of warping, sizing, weaving, doubling, knitting and dyeing. Modern winding machines must therefore be designed on sound engineering principles and built of high quality materials to close precision limits. Winding is one of the most expensive processes prior to weaving.

WINDING FRAME. Triloki Nath Sharma. *Indian Textile J. 55,* 33-5 (Oct. 1944). Suggestions are offered for obtaining maximum performance from winding frames of the vertical spindle and side spindle types.

BOBBIN WINDER. Arthur L. Jackson (to Am. Enka Corp.). USP 2 370 731, March 6. A thread winding device has a driven collector, and a thread guide which is normally out of contact with the collector but is adapted to make contact with the collector during the spinning operation.

IV, 3. Processing and finishing

TREATING YARN. Henry J. McDermott and Horace P. Fry, Jr. (to Am. Viscose Corp.). USP 2 371 638, March 20. In preparing yarn packages for liquid treatment the outer layers are stripped from the package and a protective covering is applied to the package.

IV, 4. Products (thread, yarn, cord, etc.)

HOSIERY YARNS. W. Davis, *Textile Mfr. 71,* 7-8 (Jan. 1945). Properties of woolen and worsted yarns as influenced by war conditions and by modern developments in spinning are discussed with reference to uses of these yarns not only in hosiery but in other knit fabrics.

TIRE CORD. A. Scholes, British Enka, Ltd. *J. Textile Inst. 35,* P99-110; discussion, 110-3 (Oct. 1944). Ultimate elongation is an influential factor in tire cord performance; hence the development of low stretch cotton cord. Rayon tire cord is doubtless here to stay, but relative merits of cotton and rayon still need much study.

TIRE CORD. Anon. *Textile Bull. 67,* No. 9, 16, 41 (Jan. 1, 1945) *Textile Colorist 67,* 566-7 (Jan. 1945). Illustrated descriptions of U. S. Rubber Co. at Scottsville, Va.

SPOOLING CORDAGE. James E. Pierce. USP 2 371 184, March 13. Cordage is spooled on a machine having at least 1 flanged spool with a prong on its core between the flanges. This spool is supported on rotating drums spaced apart at intervals less than the diameter of the spool core and having a central groove in which the prong can run.

IV, 5. Applications as yarn

IV, 5b. Laminates

LAMINATES. William L. Rast and David M.

Musser (to Glenn L. Martin Co.). USP 2 371 313, March 13. Plastic laminates are made by treating a suspension of fibers in a liquid with a resin which adheres to the fibers, forming the resintreated fibers into a porous sheet, compressing two of the sheets and applying them to an uncompressed center sheet of the resin-treated fibers.

SEWING RIBS. Wallace C. Wright (to Wright-Batchelder Corp.). USP 2 370 829, March 6. Sewing ribs for welt insoles are made from laminated fibrous sheet material which is cut into strips, treated with a liquid adhesive and molded into the final contour of the sewing rib.

V. YARN TO FABRIC

V, 2. Sizing

MAGNESIUM CHLORIDE SIZE. Khan Sahib J. S. Cama. *Indian Textile J. 55,* 14-19 (Oct. 1944). A common ingredient of textile sizes in India is $MgCl_2$, added as a hygroscopic agent and sometimes used alone in very dry climates. It softens and strengthens the yarn and generally improves weaving.

V, 3. Weaving

V, 3a. Looms

JACQUARD LOOMS. Anon. *Silk & Rayon 19,* 92-4 (Jan. 1945). Suggestions are offered on the timing and setting of cross border Jacquard looms for producing large patterns.

WEAVING MONOFILS. Albert Frantz. *Textile World 95,* No. 2, 145, 147, 216, 218, 221 (Feb. 1945). Successful weaving of plastic monofils demands a heavy warp tension, rigid reeds and stronger loom parts than are customary for finer and lighter yarn. One of the difficulties encountered in such weaving is the accumulation of resin particles on reeds and shuttles. Shuttle bounce is more likely to cause filling kinks than is shuttle tension.

LOOM. Crompton & Knowles Loom Works. Brit. P. 562 167 & 562 193. A loom which can be adapted to automatic weaving with weft of mixed colors or with mixed weft of the same color or to nonautomatic pick-and-pick weaving with at least 4 shuttle boxes on each side has a reserve bobbin magazine with a mechanism for transferring shuttles from the magazine to a shuttle box. A pick-and-pick weft mixing loom has 2 shuttle boxes which shift in a 4-6 cycle and has a device which moves the upper box to inactive position during the first pair and to active position during the second pair of picks in the cycle.

V, 3b. Loom parts

BOBBINS AND SHUTTLES. "Tim. Bobbin." *Indian Textile J. 55,* 25-9 (Oct. 1944). Bobbins and shuttles made of wood must be cut to exact dimensions and should be protected from dimensional change due to loss or gain in moisture content. Test results are reported for effects of oil soaking and dry heat on a variety of wood shuttles.

EVENER ROLL. Anon. *Saco-Lowell Bull. 17,* No. 1, 51-2 (Jan. 1945). A new buttress fluted fine cross-cut feed roll for pickers has proved to be exceptionally satisfactory in operation. Its construction is described and illustrated.

LOOMS. Albert Palmer, Crompton & Knowles Loom Works. *Am. Wool & Cotton Reptr. 59,* No. 6, 165, 169, 171, 173 (Feb. 8, 1945). Although about 1400 patents have been granted in the US on the picking mechanism of looms in the past century, the basic design has remained because it has practicability and low cost in its favor. A stroboscopic study of shuttle motion in looms has been helpful in mechanical problems.

POSITIVE DOBBY. Benlow. *Textile Recorder 62,* No. 742, 46-7 (Jan. 1945). The operation of the Crompton-Knowles dobby is described and illustrated with particular reference to the heald motion.

SHUTTLE TRAVERSE. A. Sumner. *Textile Mfr. 71,* 54, 60 (Feb. 1945). Shuttle traverse is vital to efficiency in weaving and even one smashup of the shuttle in a year on each loom in a mill is an item of loss and damage to be prevented if possible. Several suggestions are offered for maintenance of correct shuttle traverse and for anticipating and preventing breakdowns.

TENSILE STRENGTH. G. Gurney. *Nature 155,* 273-4 (March 3, 1945). The distribution of tensile strength of rods according to rod length is considered from the standpoint of mathematical theory. Practical uses of the results will require careful consideration.

ARMORED SHUTTLE. Harry A. Davis. USP 2 371 032, March 6. A wooden loom shuttle is fitted with a hard tough armor of fibrous material bonded to the shuttle and tipped with metal.

CHECKSTRAP. Latt J. Carter (to Graton & Knight Co.). USP 2 371 025, March 6. A checkstrap is made with a strap and plug, the plug being designed for contact with a picker stick.

LADDER TAPE. Edwin J. Gibbons. USP 2 371 164, March 13. In weaving ladder tape the cutter for severing crossover threads is actuated by the same device which actuates the loom harness.

LOOM. Joseph Vanore (1/5 each to Henry Bernascone, John Scielzo, Vergelio Bandini and James Parker). USP 2 371 562, March 13. A picker stick is pivoted in its carrier to move in an upright plane and is fitted with a device to check its shuttle-impelling movement and then retract the picker stick.

LOOP PICKER. Henry N. Bacon (to Dayton Rubber Mfg. Co.). Can. P. 425 954, March 6. A molded loop picker of rubberized fabric is tough and

resilient; it has a shuttle point contact depression molded in its face, but presents a smooth hard outer surface to fibers being processed so that they do not catch or snag.

PICKING MOTION. Peter E. Provost. USP 2 371 354, March 13. An adjustable picking motion has a shoe adjustably mounted on the picker stick by means of a slotted shank, a bolt and a pair of set screws.

PIRN HOLDER. H. Wrigley, N. Walsh and F. Howarth (to Kirk & Co. (Blackburn) Ltd.). Brit. P. 561 847. A pirn holding device for shuttles has a cup sliding on a peg and fitting the flanged base of the pirn. The cup has projections fitting into holes in the arms of a clip mounted on the head of the shuttle.

SHUTTLE BRUSH. John A. Matson. USP 2 371 701, March 20. A weaving shuttle has brush holes through the bobbin chamber, and receivers into which a brush holder is screwed for each hole. The bristles extend through the brush holder and into the bobbin chamber.

SHUTTLE GUARD. F. Stuttard and J. O. Whittaker. Brit. P. 561 751. An improved shuttle guard lies while in its inoperative position against the sley cap. When the loom starts the guard automatically returns to operative position through the momentum of the sley.

THREAD HOLDER. Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 370 826, March 6. A self adjusting thread holder for weft replenishing looms has reserve bobbins from which weft ends extend. Their number decreases during operation of the loom, which has a vibrating support on which gears are mounted to engage the weft ends.

V, 3c. Control devices; stop motion; bobbin selectors

BEAMER. Fritz Lambach. USP 2 370 672, March 6. A beamer has an electrically driven beam on which a warp is wound and a movable control device which actuates the starting switch by moving in one direction and the stopping switch by moving in the opposite direction.

WARP LETOFF. Sulzer Freres S. A. Brit. P. 562 238. A warp letoff device has a tension beam mounted on a shaft adapted to swing on levers on a stationary frame. The arc of contact of the warp around the tension beam is the same as the arc of contact of the tensioning rope around the beam, so that resistance to rotation of the tension beam is minimized.

YARN TENSION. Hans Hartung (to Robert Reiner). USP 2 371 620, March 20. A tension control device for yarns being wound on a beam in warping or beaming has a rotating drum feed on which the contact between yarn and feed drum is controlled in order to vary the yarn tension as desired.

V, 3d. Processes

POSTWAR WEAVING. H. V. *Textile Mfr. 71,* 8 (Jan. 1945). As a first step toward automatic weaving it is recommended that semi-automatic systems should be adopted as soon as conditions permit. Use of rewound weft is profitable to the employer and makes working conditions more attractive to the employee.

V, 3e. Defects

RAYON WEAVING. J. Stross. *Textile J. of Australia 19,* 342, 346 (Nov. 1944). Causes and prevention of defects in rayon weaving are discussed, with specific attention to winding, warping, sizing, weaving, letoff, takeup, picking and drives.

WEAK SPOTS. Frank Kendall. *J. Textile Inst. 35,* T 117-22 (Sept. 1944). Defective conditions occurring during loom stoppage, e. g. faulty heald alignment, cause weak places in the fabric. Using heavy duck with a very severe weak spot it has been possible to stop rupture tests at a point showing only alternate ends broken.

V, 4. Knitting

TRICOT KNITTING. Otto Engelhard, Sherman and Associates. *Textile World 95,* No. 2, 155, 157 (Feb. 1945). The fundamentals of filling-knitting are reviewed. Flat bed machines permit fashioning but only at a sacrifice of production capacity. The ultimate in design of circular knitting machines would be warp knitting.

TRICOT MACHINE. Otto Engelhard, Sherman and Associates. *Textile World 95,* No. 2, 121 (Feb. 1945); *Can. Textile J. 62,* No. 2, 44, 46 (Jan. 26, 1945). The new FNF tricot knitting machine claims a speed of 1000 courses per minute on the 84 in. width. A new type needle is used and cams are eliminated.

HOSIERY. G. Wilders and J. E. Lynam (to William Cotton Ltd.). Brit. P. 562 213. A machine for knitting heel tabs on stockings comprises a straight bar knitting machine having its needle bar equipped with bearded needles.

KNITTING. Oscar Fregeolle. Can. P. 426 045, March 13. Split fabric is knit on a circular independent needle knitting machine by simultaneously knitting on 2 groups of needles with individual yarns one of which is drawn over the backs of the sinkers and through the needle loops of the previous course.

KNITTING MACHINE. Ernest Cotterill (to Courtaulds Ltd.). Can. P. 426 105, March 13. The needles of a warp knitting machine have a hollow shank and a hook at one end of the shank. For each needle there is a tongue which alternately overlaps the needle hooks and withdraw into the hollow shank.

KNITTING MACHINE. Frank G. Weisbecker (to Hosiery Patents Inc.). USP 2 370 762, March

6. A bearing structure for straight knitting machines comprises a pair of bearings mounted on a support which is fixed with respect to the sinker head.

KNITTING MACHINE. George Wilders (to William Cotton Ltd.). USP 2 371 091, March 6. An improved screw-racking mechanism for Cotton's Patent or other straight bar knitting machine.

KNITTING MACHINE. Hans Diem (to Edouard Dubied & Cie., S. A.). USP 2 370 619, March 6. A circular knitting machine has a pattern device which is equipped for automatic changing from 1:1 to 2:2 rib knitting.

KNITTING MACHINE. Harry W. Start and Ernest Start. USP 2 371 931-2, March 20. A chain drive for the reciprocating part of a straight bar knitting machine has discs with openings to engage with the driver and relieve it of strain as it passes around the sprockets. A welt turning mechanism for straight bar knitting machines has picotec arms for holding the welt wire and the takeup straps so that these straps engage with the welt wires when tension is applied.

KNITTING MACHINE. Samuel Saftlas. USP 2 372 019, March 20. Performance of a knitting machine is improved and defects in the fabric are prevented by an electric heating element which is held in a fixed heat transferring relation with the knitting portions of the machine.

KNITTING MACHINE. Thomas C. Bromley and Arthur Shortland (to Mellor Bromley & Co.). Can. P. 426 257, March 20. A device for drawing off fabric from a knitting machine has a pair of fabric gripping rolls which can be separated as required.

KNITTING NEEDLE. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 371 598, March 20. The penetrating end of a knitting needle has both an eye and a thread receiving slot. The eye is crosswise of the needle and farther from the end than the slot.

NEEDLE GAUGE. John T. Nock (½ to L. Copley-Smith & Sons, Ltd.). Can. P. 426 287, March 20. A gauge bore for determining the size of knitting needles has a housing with a tapered aperature, a marked scale and a spring controlled finger pivoted on the housing so that it can move across the scale.

NONWRINKLING GLOVES. C. F. Schuessler. Brit. P. 561 449. Gloves which fit the normal curvature of the hand and do not wrinkle are knit with the palm portion in close stitches and the outer portion in relatively looser stitches.

PATTERNED KNITTING. R. Kretser. Brit. P. 561 907. A circular knitting machine has groups of cams for raising needles to their latch clearing position, the cams of each set being arranged to move selected needles on the cylinder.

STOP MOTION. Harry Searles and Ellsworth E. Carlson (to Van Raalte Co.). USP 2 371 110, March 6. A knitting machine having yarn supplied from a warp beam has a stop motion which is actuated when the thread leaving the beam is deflected from its normal path by an electrostatic field which displaces broken or slack threads.

TAKEUP DEVICE. Hemphill Co. Brit. P. 562 247. A fabric takeup mechanism for knitting machines has opposite rolls mounted to accommodate different thicknesses of cloth. These rolls are separately driven.

TURNING WELT. Wildman Mfg. Co. Brit. P. 562 243, 562 245, 562 264-5. The welt of a fabric knit on a full fashioned knitting machine is turned by holding loops of an initial course on the point and moving the point toward the needles after the fabric is knit so that the point penetrates through a second course of a fabric, after which both courses are transferred to the needles. A welt rod has the takeup mechanism continuously connected to it during knitting. The welt turning mechanism has a shoulder for engaging loops and below it an extension to penetrate fabric; or the mechanism may consist of a rod with plates attached near its end and a device for attaching a takeup to the plate.

YARN FEED. Oscar Fregeolle (to Hemphill Co.). Can. P. 426 118, March 13. A yarn feeding device for a circular independent needle knitting machine is pivoted inside the carrier ring and is movable to and from a feeding position next to the circle of needles.

V, 5. Pile fabrics, laces, embroideries, netting

LACE CURTAINS. Lester Fischel (to Patchogue-Plymouth Mills Corp.). USP 2 371 039, March 6. A 2-in-1 lace curtain is woven with a heading portion and a body portion in one piece in such a way that by removal of a draw thread a single panel can be converted into a matched pair of ready to hang curtains.

PILE FABRIC. Benjamin S. Faber. USP 2 371 038, March 6. Pile loops in a pile fabric are effectively held against distortion by an additional ground warp thread serving as a center line for its effective pile warp thread, which binds on alternate sides of the extra ground warp thread.

PILE FABRIC. Collins & Aikman Corp. Brit. P. 561 769. Face to face weaving of pile fabric is carried out by interconnecting the ground fabrics with pile yarn, temporarily forming loops which do not interlace with the ground but are in the interconnecting pile warp yarns and supporting these loops by supports lying in different planes. After releasing the supports and studying the ground fabrics the interconnecting pile yarn is cut to separate the two pile fabrics.

PILE FABRIC. J. I. Boothroyd (to Boothroyd Rugs Ltd.). Brit. P. 561 805. A resilient pile fabric is woven face to face on a double shuttle double plush loom, using pile threads of resilient

fiber. The number of threads at each crossing is doubled to provide flexible resilient resistance to pressure against the ground fabrics.

PILE FABRIC. M. Strode. Brit. P. 562 068. In making cemented pile fabrics a device is employed which supplies unspun fiber in loops the first of which is formed before a clamp and the second after the fiber passes the clamp.

PILE FABRIC. William R. Keen (to Collins & Aikman Corp.). Can. P. 425 824, Feb. 27. A woven fabric with a loop pile has pile loops of at least three different heights along the warp, all formed from a single continuous pile yarn, and a weftwise roll of pile loops of different height, one loop being common to both the warpwise and the weftwise roll.

RAISING PILE. C. Blair. Brit. P. 562 287. A machine for raising the pile on fabric after bleaching and rendering the fabric absorbent has a spiked roll and a raising knife carried by a bar which slides in a knife raising block as the spiked roll draws the cloth forward the block moves to and fro scraping the pile at each cycle.

RUGS. Robert E. Walliser (⅓ each to Thor S. Johnson, William F. Stahl and Arthur Hanisch). USP 2 371 199, March 13. The pile warp threads in a rug are spaced apart by at least 1 ground warp thread between each 2 pile warp threads, and each pile thread is drawn up between a pair of weft threads differing from the pair between which the next pile warp thread is drawn.

V, 7. Products; design; construction

ARMY MELTON. Fred Sykes. *Textile World 95,* No. 2, 159 (Feb. 1945). Production hints are given to aid in the manufacture of 20 oz. army melton, since there is a shortage. Warp should be dressed about 2 inches wider than the reeds. The roving should be kept a few grains lighter than usual. An 8 oz. soap has been used successfully in fulling the fabric.

ARMY SATEEN. Anon. *Textile World 95,* No. 2, 129 (Feb. 1945). Manufacturing details are given to permit production of 9 oz. sateen under army specification No. 6-337. There is an acute shortage of this fabric.

COLOR AND DESIGN. J. C. H. Hurd. *J. Textile Inst. 35,* P85-92 (Aug. 1944). A lecture on design of knit fabrics and knit garments, with special reference to uses of color in design.

COLOR SENSE. L. F. N. Reid. *J. Textile Inst. 35,* P143-5 (Dec. 1944). Color sense (as distinguished from color perception) is inherent and cannot be cultivated by individuals in whom it is not native. Color sense is vital in the esthetic aspects of textile design.

FABRIC DESIGN. E. W. Goodale. *Textile Mfr. 71,* 52 (Feb. 1945). Postwar textiles will presumably be increasingly subject to permanent

finishes and processes. To increase their resistance to light, laundering, perspiration, fire and other influences designs should be functional and any decorative effect should be appropriate both to the final use of the article and to its method of manufacture.

FABRIC DESIGN. Leonard Bellwood. *Textile Weekly 35,* 122, 124, 126, 176, 179-80 (Jan. 19, 26, 1945). Weave stripes for worsted suitings must be designed with both weaves as integral parts of a single fabric and the yarns must not differ so much as to cause significant changes due to shrinkage and felting. For example crossbred wool and merino do not shrink or felt alike and would not make a suitable choice for weave stripes. The proportion of stripe to ground is an essential design. Reverse twill stripes, rayon stripes and obtuse twill feather are among the suitable designs in suiting fabrics (to be continued).

FINISHING OVERCOATING. Anon. *Am. Wool & Cotton Reptr. 59,* No. 4, 13-14 (Jan. 25, 1945). In finishing 36-37 ounce overcoating the principal problem is fulling. A simple method is presented for calculating weight per yard. Suggestions are offered for washing, extracting, shearing and pressing the fabric.

RAYON CREPE. Anon. *Am. Wool & Cotton Reptr. 59,* No. 5, 11-14 (Feb. 1, 1945). A special acetate-viscose rayon crepe is similar to canton crepe but is made by a different method. The warp is acetate and the filling is novelty viscose; the weave is like a fine poplin but has more ends and finer deniers.

LUBRICATED ROPE. Richard F. Warren, Jr. USP 2 372 142, March 20. A rope is formed around a lengthwise core of plastic material containing particles of a lubricant embedded therein.

MAKING BAGS. Charles Tessendorf and Frank J. Gruper, Jr. (to Marathon Corp.). Can. P. 426 126, March 13. Bags are produced continuously from a series of tubes of sheet material coated with a heat-sealing adhesive by heating and pressing an end portion of the tube to form a seam, flattening the tube, cooling the seam and setting the seam under pressure.

RESILIENT PADDING. E. Glendenning and F. Binns. Brit. P. 562 185. A thick composite fabric with a fold formation is formed in successive folds intersected by warps of backing cloth. If asbestos is used the product is fireproof.

SAUSAGE CASING. Louis J. Menges. Can. P. 426 174, March 20. Skinless sausages are marked by stuffing the sausage into a cellulose casing which is marked on the outside with a pigment which passes through the casing wall to the surface of the sausage when wet.

SHOE SOLE. John Gregg and David E. Levin. USP 2 371 689, March 20. A shoe sole is made of a soft fiber pad wrapped in a textile material which is bonded to the pad by a layer of vulcanized rubber.

TRAFFIC MARKER. Francis Nicholson. USP 2 371 462, March 13. A premoulded slab of wear resisting material used as a traffic marker has a backing of untreated woven fabric, larger in area so that the backing forms a strip around the edges of the slab.

TUBING. Watson G. Harding (to U. S. Rubber Co.). USP 2 371 991, March 20. A light weight tube with high strength against inward forces has a carcass of flexible fibrous material formed in corrugation with a coating of stiffening material on the ridges but not in the valleys.

WINDOW SCREEN. Camille Dreyfus. Can. P. 426 042-3. Window screens are made of open mesh fabric formed from soot and hydrolyzed cellulosic acetate filaments or yarn of heavy denier (250-1000) and covered by a waterproof coating. The yarns may be composed of stretched filaments with ethyl cellulose as binding.

LIGHT WEIGHT SILK FABRIC. Specification D. T. D. 486, Ministry of Aircraft Production, H. M. Stationery Office, London WC 2, June 1941; reprinted Dec. 1944 with amendment list No. 1; price 7d.

V, 8a. Insulation

INSULATED WIRE. C. Wilkinson and H. S. Northway (to British Insulated Cables Ltd.). Brit. P. 562 218. Wire is coated with cellulose acetate by winding it with acetate yarn and treating it with a solvent vapor until the adjacent threads swell and flow together.

INSULATION. George E. Phillips (to National Electric Products Corp.). Can. P. 425 984, March 6. A server head which wraps a jacket of thread around a wire conductor as it moves past has a carrier which rotates around the wire and takes the thread from a number of bobbins as it revolves, while maintaining uniform tension on the unwinding thread.

THERMAL INSULATION. Walter Garner (to Lister & Co., Ltd.). Can. P. 426 288, March 20. Two textile fabrics are woven so that they are held together (with about 1/16" between) by connecting threads. The space between fabrics is packed with fibrous material.

V, 8b. Coated or impregnated products

CELLULOSIC FINISH. Sidney Edelstein, Hart Products Corp. *Textile Colorist 67,* 565, 590 (Jan. 1945). Catalytically activated caustic solutions of cellulose permit the application of permanent cellulosic finish on a variety of fabrics. Successful applications are reported to pigment taffeta, rayon twill, pile fabrics and spun rayon goods, numerous other applications are in prospect.

COATED FABRICS. Marian W. Cerf, Plasticote Co., *Textile Colorist 67,* 572-3 (Jan. 1945). It is important that finishing should be completed before applying the coating on coated fabric. Types

of finish suitable for cotton and rayon are discussed. For printed coated fabrics the printing may be done before or after coating.

COATED TEXTILES. Anon. *Modern Plastics 22,* No. 5, 1-8, 62-5 (Feb. 1945). Postwar coated fabrics will utilize a wide variety of natural and synthetic coating materials including rubber, cellulose derivatives (esters and ethers), vinyl resins, acrylic resins and drying oils. Double textures will be much used in heavy garments and the shoe market will be an important user. Vinyl coatings will be a strong competitor of pyroxylin in making patent leather. It is possible that polyvinyl butyral will find a quality market for use on table linens.

FIRE HOSE. A. C. Thaysen, H. J. Bunker and Miss M. E. Adams, Dept. of Scientific and Industrial Research. *Nature 155,* 322-5 (March 17, 1945). When fire hose is not thoroughly drained after use the retained water gradually becomes acid with H_2SO_4 (from S in the rubber lining). The acid soon weakens the cellulose of the hose fabric. Of 300 hose bursts investigated in Great Britain more than half were traced to acid damage. Water taken from stored fire hose contained sulfur-oxidizing bacteria, which would account for the H_2SO_4.

PLASTICS AT WAR. Anon. *Modern Plastics 22,* No. 5, 8-11 (Jan. 1945). Uses of plastics by the army and navy include numerous applications to fabrics for flameproofing and other effects in upholstery, bedding bags, portable hangers, waterproof pistol covers, insect screens (generally of plastic monofils), waterproof wrapping for engines and other metal products and a variety of protective coatings.

BANDAGE. Raymond Stone. USP 2 371 001, March 6. A bandage material with stronger adhesion to itself than to the skin is made by coating gauze with an unsaturated solid solution of polyvinyl acetate in a solvent plasticizer in suitable proportions.

STENCIL SCREEN. Harry E. Playford (to Liberty Glass Co.). USP 2 370 874, March 6. A light-sensitive stencil screen has a synthetic mesh fabric base which will stretch when wet. To make the screen the fabric is stretched on a frame while wet, dried, treated with gelatin size and coated with a sheet of photosynthesized gelatin.

TEXTILE FABRIC. Donald Finlayson and Harry Crawshaw (to British Celanese Ltd.). USP 2 370 946, March 6. A base for varnished fabric has yarns of high strength and low extensibility and with low strength and high extensibility in both the warp and the weft. The low strength yarns hold the high strength yarns in the fabric since the latter are not interlaced with each other.

TWENTY YEARS OF PLASTIC SURFACING. Roxalin Flexible Finishes, Inc. Elizabeth, N. J. 1945.

Reviewed in *Modern Plastics 22,* No. 5, 58 (Feb. 1945).

V, 8c. Laminates

LAMINATED TARPAULINS. Anon. *Nat'l*

Canvas Mfrs' Rev. 20, No. 12, 10 (March 1945). A new laminated tarpaulin made of paper and burlap will save large quantities of cotton duck for the QMC. The new tarpaulins effect large savings in cost and is smaller than duck tarpaulin both in weight and bulk. Olive drab kraft paper with high weft strength is creped and laminated to burlap with an asphalt which does not crack in the cold nor bleed at tropical temperatures. The Institute of Paper Chemistry is making a study of treatment to improve weather resistance of the new paper and burlap tarpaulin.

LAMINATES. Anon. *Modern Plastics 22,* No. 5, 13-15, 65-6 (Jan. 1945). With the aid of melamine-aldehyde resins laminates can now be successfully produced in ordinary presses at pressure not over 250 psi. The low pressure permits exact reproduction of colored designs without discarding the pattern. Methods and equipment for making decorative laminates of this kind are described and illustrated.

RAILROAD PLASTICS. Kenneth R. Porter. *Plastics 2,* No. 1, 48, 50, 116-8 (Jan. 1945). Among the new products for railroads now being produced by the plastics industry is a plastic laminate reenforced with paper or fabric and with steel wire and cotton for use in building railway cars.

BELTING. S. W. Warren (to Dunlap Rubber Co. Ltd.). Brit. P. 561 917. Superimposed plies of fabrics are bonded together with natural or synthetic rubber and sewed with zigzag seams along the edge of the belt.

VI. FINISHING

CREPEING NYLON. G. Loasby and H. C. H. Tallis (to British Nylon Spinners Ltd.). Brit. P. 562 555. Fabrics woven partly or entirely from nylon thread or monofils are creped by pretreating the nylon before weaving so that differential shrinkage will occur. The pretreatment may be with formaldehyde or a substance which liberates formaldehyde. The woven fabric is treated with a shrinking agent to bring about the differential shrinkage.

VI, 1. Preparation

VI, 1a. Boiling and scouring

CAUSTIC REMOVAL. Fred A. Huntress, Pepperell Mfg. Co. and A. L. Dubeau, Mathieson Alkali Works. *Textile World 95,* No. 2, 153 (Feb. 1945). The cost of the bicarbonate process for removing caustic from fabrics after boiling out is in line with the cost of acid neutralization, with the advantages of greater safety both to the fabrics and to workmen, and of little or no corrosion on metal equipment.

SCOURING WORSTEDS. Anon. *Dyer & Textile Printer 93,* 61-2 (Jan. 19, 1945). Causes and prevention of bleeding in scouring multicolor worsted piece goods are discussed. It is said the creosote soap permits scouring of such difficult goods as black and white checked pattern worsteds at about 120°F.

VI, 1d. Drying and conditioning

DRYER CONTROL. K. S. Laurie. *Textile Recorder 62,* No. 742, 53, 55 (Jan. 1945). Automatic speed control on driers for textile fabrics provide better conditions for operators and has numerous advantages in cloth production, including greatly increased output.

DRYING PRINT GOODS. Technicus. *Can. Textile J. 62,* No. 2, 36, 38, 48 (Jan. 26, 1945). Hot air drying in the printing of textile fabrics with dye patterns has the advantage of improving penetration of the dye. It also prevents creasing of the fabric. The technique is described.

INFRARED DRYING. David B. Kopp, Fostoria Industrial Service. *Fibre and Fabric 98,* No. 3136, 8-10 (March 10, 1945). Drying of textiles by infrared heat has numerous possibilities but there are a variety of problems still to be solved. Successful installation includes driers for cloth coming from the calender; heaters for warp yarn after sizing; drying ink on Koroseal luncheon cloths; drying duck and other wired fabrics, and drying thread at a rate 4 times faster than with an ordinary oven.

RADIANT HEAT DRYING. Hunter R. Hughes, Jr. *Southern Power and Industry 63,* No. 3, 92-3, 114 (March 1945). Radiant heat for a variety of industrial drying processes can be derived from infrared units in which the source of energy is either electrical or chemical (gas combustion). Textile drying is one of the principal applications in regions where gas is cheap and textiles are manufactured. An installation for drying jute felt is illustrated.

DRIER ROLLS. Brit. Cellophane Ltd. Brit. P. 561 874. Hollow rolls used for drying wet sheet material are made of concentric tubes the inner one of which delivers heating fluid to the inner surface of the outer tubes.

VI, 3. Milling and Fulling

SCOURING AND MILLING. F. R. H. Williams. *Textile Mfr. 71,* 80 (Feb. 1945). The Williams-Peace combined milling and scouring machine permits operation under complete control. The control feature permits combined scouring and milling of mesh fabrics which are difficult to handle in other machines.

VI, 6. Sizing and finishing

TEXTILE PRINTING. Technicus. *Textile Weekly 34,* 880, 882, 884 (Nov. 24, 1944); *35,* 128, 130, 132, 135 (Jan. 19, 1945). Some padding treatments for use in printing size on textiles are described, e. g. with gum on rayon or silk. Current practice in padding for clearing and for reaging of vat prints is described.

VII. COLOR

MEASUREMENT OF COLOR. W. D. Wright. Adam Hilger Ltd. London, 1944; 223 pp.; 30s.
Reviewed in *Dyer & Textile Printer 93,* 232 (March 16, 1945); *Textile Mfr. 71,* 61 (Feb. 1945).

VII, 1. Bleaching

BLEACHING JUTE. B. P. Ridge and A. H. Little, Imperial Chemical Industries Ltd. *J. Textile Inst. 35,* P121-35 (Nov. 1944). For mild bleaching of jute without undue degradation cold or warm alkaline hypochlorite is recommended. For better shades it is best to begin with a mild (soda ash) scour, containing a small amount of peroxide, and follow the alkaline hypochlorite with a hot peroxide bleach.

BLEACHING WOOL. Anon. *Textile Recorder 62,* No. 742, 56-7, 59, 65 (Jan. 1945). Current British practice in bleaching wool is reviewed, with special attention to controlling factors such as pH

BLEACHING COTTON. The Mathieson Alkali Works. Brit. P. 561 834. Cotton piece goods and rayon are bleached with a hypochlorite solution containing Na chlorite, the ratio of available chlorine provided by chlorite and hypochlorite should be about 2:3, with pH between 8.7 and 10.0.

PEROXIDE BLEACH. Walter S. Riggs and Rudolf Lehmann (to Pennsylvania Salt Mfg. Co.). USP 2 371 545, March 13. The surface tension of a peroxide bleaching bath is controlled by adding an appropriate quantity of a lauryl sulfate, an alkylated benzene (or naphthalene) sulfonate or dioctyl sulfosuccinate or the like.

VII, 2. Dyeing

CROSS DYEING. Anon. *Am. Wool & Cotton Reptr. 59,* No. 1, 7-9, 13 (Jan. 4, 1945). To obtain cross-dyed shadow effects in viscose-acetate rayon blends the yarn must be inserted in such a way that a portion can be eliminated in finishing. The twist of the yarns and the selection of sizes and dimensions are also influential factors.

DYEING AND DRYING. Symposium. *Am. Dyestuff Reptr. 34,* P99-104, P108-21 (Feb. 26 & March 12, 1945). Papers presented at the Cotton Group meeting, AATCC, Oct. 14, 1944; R. S. Stribling, Philadelphia Quartermaster Depot, recent developments in vat dyeing; C. Norris Rabold, Union Bleachery, recent developments in drying textiles by steam, indirect firing, radiant energy and dielectric heating; roundtable discussion on printing and dyeing with pigment colors, use of resin bonded pigments in dyeing and printing and binders for pigments.

DYEING HOSIERY. Anon. *Dyer & Textile Printer 93,* 205-6 (March 2, 1945). Practical hints are given on dyeing rayon hosiery and especially the varieties in which different rayons or rayon and other fibers are blended.

DYEING LININGS. Anon. *Silk & Rayon 19,* 96, 98 (Jan. 1945). Directions are given for formulating the scouring liquor and preparing viscose-acetate rayon blends for dyeing. The fabrics are used in linings (to be continued).

DYEING RAGS. J. A. Ferguson. *Textile Mfr. 71,* 30-1 (Jan. 1945). In dyeing wool rags or shoddy there are certain peculiarities and special requirements to be met, such as carbonizing when the material includes cotton or other cellulosic fibers. Stripping is an important preparatory feature and in a few cases selected dyed rags can be stripped to the desired shade without any further dyeing.

DYEING RAYON. Technicus. *Silk & Rayon 19,* 105-6 (Jan. 1945). Wetting out agents permits even dyeing and has a protective effect on viscose rayon, which is sensitive to damage by chemical agents. Uniformity in dyeing and finishing is particularly important and is aided by the use of wetting out agents (to be continued).

DYEING TEXTILES. E. Kornreich. *Textile Mfr. 71,* 33-4 (Jan. 1945). On the basis of research in fiber properties, fiber structure, aggregation and crystallization as factors in the kinetics of dyeing, and other fundamental features the dyeing process is now being elevated from a craft into a science.

PACKAGE DYEING. H. K. T. *Can. Textile J. 62,* No. 2, 34 (Jan. 26, 1945). With the aid of low pressure circulation satisfactory results have been obtained in dyeing yarn packages with direct developed and vat dyes. A modified raw stock machine is used for the purpose.

PRINTING ON RAYOLANDA. R. A. McFarlane, Courtaulds Ltd. *Textile Mfr. 71,* 74-7, 79 (Feb. 1945). By taking advantage of certain special properties possessed by rayolanda fabrics made of rayolanda or its blends can be dyed in many styles and patterns. Excellent raised effects can be obtained for dressing gowns and other fabric.

UNION DYEING. Anon. *Am. Wool & Cotton Reptr. 59,* No. 10, 11-12 (March 8, 1945). A review of problems encountered in dyeing blends of wool with rayon or cotton.

DYEING RAYON. Robert Burns (to Celanese Corp. of Am.). USP 2 371 221, March 13. The fastness of dyed acetate rayon to acid fumes is improved by treating fabric dyed with a dispersol type water-insoluble anthraquinone dye with a water-insoluble metal tannate.

APPLICATION OF DISPERSOL VL IN DYEING. Leaflet of Imperial Chemical Industries, Ltd. London, 1944.
Reviewed in *Dyer & Textile Printer 93,* 69 (Jan. 19, 1945).

VII, 2a. Direct

DIRECT DYEING. George Broun. *Textile Bull. 67,* No. 10, 25-6 (Jan. 15, 1945). Direct dyes for acetate rayons have become especially important

because they also dye nylon with satisfactory levelness and fastness. The present trend in dyes for acetate is toward finer dispersion and hence greater ease of application.

TREATING NYLON. James H. McGregor (to Courtaulds Ltd.). USP 2 371 536, March 13. Nylon can be dyed with direct cotton dyes from an acid bath by adding to the bath 0.1 to 1% of a cationic soap.

VII, 2c. Vat

CONTINUOUS VAT DYEING. P. W. Benn. *Can. Textile J. 62,* No. 4, 43-4 (Feb. 23, 1945). A practical formula is presented for continuous leuco vat dyeing of cotton piece goods and a layout of the mechanical equipment is described and illustrated.

VAT DYEING. Carl H. Brubaker (to Standard Bleachery and Printing Co.). USP 2 371 145, March 13. An electric current between iron positive and nickel negative electrodes is used to aid penetration of a dye into a fabric in an alkaline vat containing the reduced dye which is later developed on the fabric.

VII, 2d. Printing

TEXTILE PRINTING. Symposium. *J. Soc. Dyers & Colorists 61,* 29-38 (Feb. 1945). Papers by E. S. Beton, block printing, old and new; J. S. Heaton, evolution of styles in calico printing; W. Meitner, mechanism of acid dye printing on cellulosic fabrics; J. W. Reidy, comparisons in dyeing and printing methods. Discussion, p. 38.

PRINTING FABRICS. Bruno Sonnino. USP 2 371 930, March 20 (vested in the Alien Property Custodian). A machine for printing fabrics has a stationary bed along which a support moves to carry the fabric on which is superposed a textile template. Across the stationary bed is a track along which a color truck moves to spray color on the template. The arrangement is such that uncolored areas of fabric and template are successfully presented to the color spraying.

SOME OBSERVATIONS ON THE PRINTING OF ACID DYESTUFFS ON VISCOSE AND CUPRAMMONIUM RAYONS. Technological Monograph No. 2, Dyestuffs Division, Imperial Chemical Industries, Ltd., London, 1944 (copies available from Organic Chemicals Div., Can. Industries Ltd., Montreal, Quebec).

Abstracted in *Can. Textile J. 62,* No. 4, 44, 48 (Feb. 23, 1945).

VII, 4. Pigment Coloring

LUMINESCENT TEXTILES. M. A. Heikkila, N. J. Zinc Co. *Textile Colorist 67,* 564-5 (Jan. 1945). There are many design possibilities in pigmented textiles which become phosphorescent after exposure to light. There are 2 principal classes of luminescent pigments namely, those having a short afterglow and those having a long afterglow when exposed to light. Clear transparent binders should be employed.

PIGMENT DYEING. Interchemical Corp. Brit. P. 561 641-2. A three-phase pigmented emulsion for printing on fabrics has an aqueous phase, a pigmented resin phase in an organic solvent and an organic phase which is not fully miscible with the other two. Pigment dispersion at low concentration is thereby improved. Pigment dyeing of fabrics is effected without migration of the color as the fabric dries. Binders used in the emulsion serve to render the printed design fast to laundering and dry cleaning. Among suitable resins for the purpose are urea-formaldehyde, phenol-aldehyde and short oil alkyd resins.

VIII. PROOFING

COTTON DUCK HOUSES. Anon. *Nat'l Canvas Goods Mfrs' Rev. 20,* No. 11, 19 (Feb. 1945). From an experiment started in 1939 by the Farm Security Administration it appears that roofs and outer wall coverings of cotton duck for small low cost houses are serviceable if painted about every 4 years with a flameproof, waterproof, mildewproof paint. The cotton duck cover provides good heat insulation for winter and summer comfort.

FINISHING FABRICS. Symposium. *Am. Dyestuff Reptr. 34,* P77-9, P88-98, P104 (Feb. 12 & 26, 1945). Papers by D. H. Powers, Monsanto Chemical Co. Newer resinous materials and their effects on fibers and fabrics; E. J. Siegrist, Holeproof Hosiery Co., hosiery finishing; William H. Weston, USDA, nature and control of tropical deterioration of fabrics; G. P. Fulton, USNR, treatment and retreatment of garment fabrics to impart water repellency.

VIII, 1. Waterproofing; weatherproofing; moistureproofing

CANVAS. Anon. *Fibers, Fabrics & Cordage 12,* 54, 57 (Feb. 1945). A specification is presented for a cotton-jute blend canvas. This and several other wartime canvas fabrics have postwar possibilities. Uses include water bags and other waterproof fabric products.

FACE MASK. Anon. *Nat'l Canvas Goods Mfrs' Rev. 20,* No. 11, 14 (Feb. 1945). The war department has announced a new cold weather face mask designed by QMC for protection at extremely low temperatures. The outer shell is olive drab 9 ounce wind-resistant cotton sateen which is also water repellent. The face, nose guard and chin piece are lined with wool and the head piece is lined with silk.

FIELD PACK. Anon. *Nat'l Canvas Goods Mfrs' Rev. 20,* No. 12, 28-30 (March); *21,* No. 1, 20, 32, front cover (April 1945). A new all purpose field pack developed at the Jeffersonville Quartermaster Depot is divided into a combat pack and a cargo pack, both are made of heavy chemically treated duck with a waterproof overlapping throat which can be tucked in to make a water-tight closure.

PROOFING FABRIC. Anon. *Jute & Canvas Rev. 16,* No. 196, 7 (Jan. 1945). A brief review of waterproofing and other proofing treatments for duck and other fabrics and the use of synthetic resins and thermoplastics for bonding fibers.

SPUN RAYON. W. A. Neill. *Textile Bull. 67,* No. 10, 22, 41 (Jan. 15, 1945). Illustrated description of methods and apparatus for applying water-repellent finishes to spun rayon poplins used in wind breakers, raincoats and sports shirts.

WATERPROOFING FABRICS. J. R. F. Jackson. *Textile Recorder 62,* No. 742, 60-1 (Jan. 1945). Waterproof fabrics which are impermeable to air as well as to water are designated as "nonventile" while water-repellent fabrics which are permeable to air and water vapor are designated as "ventile." Velan PF is an improvement over ordinary wax emulsion water-repellent finishes, with the added advantage that it is compatible with urea resin creaseproofing finishes. Nylon requires hot calendering after application of the water repellent finish. The product resembles fine oiled silk in appearance but is much stronger.

WATER-REPELLENT FINISHES. Raymond A. Pingree, Warwick Chemical Co. *Textile World 94,* No. 12, 86-8 (Dec. 1944); *95,* No. 2, 131, 133, 135, 222, 224, 226 (Feb. 1945). Water-repellent finishes for garments and domestic fabrics need time for penetration and the cloth should be properly prepared before application. Fabrics of different weights require different padding arrangements. Air drying is preferable to forced drying but on steam can driers a cooling can at the end will do much to prevent deterioration of the finish. Two quaternary ammonium compounds offer satisfactory durability even through dry cleaning and fabric processing.

WETTABILITY. Helmut Wakeham and Evald L. Skau, Southern Regional Research Laboratory, USDA. *J. Am. Chem. Soc. 67,* 268-72 (Feb. 1945). An improved method for estimating surface wettability from contact angle measurements utilizes an ordinary interfacial tensiometer. There is good agreement between observed and theoretical contact angles. Application of the method to measuring contact angles of water on fabric and paper is described and illustrated.

WATERPROOF HESSIAN. R. and J. Pickles. Brit. P. 561 906. A waterproof fabric is made from several layers of hessian coated with a mixture of plasticised nitrocellulose and at least an equal proportion of linseed or castor oil.

WATERPROOFED AND DYED COTTON FABRIC. Specification D. T. D. 336C (Superseding D. T. D. 336B). Ministry of Aircraft Production. H. M. Stationery Office, London WC 2, Dec. 1944; price 1s. 1d.

VIII, 2. Insectproofing

LOUSEPROOFING CLOTH. I. M. Heilbron. *Textile Mfr. 71,* 78-9 (Feb. 1945). In the Aldred lecture to the Royal Society of Arts louseproofing of fabrics and garments is reported as one of the uses of the new insecticide DDT, the effect is not highly laundry fast but will stand about 5 steam laundry washings or 8 ordinary washings. For military use a plan has been developed for retreatment in field laundries. Mothproofing is not mentioned as a function of DDT.

VIII, 3. Proofing against microbiological attack

ROTPROOFING JUTE. L. H. Bryant and S. Smith-White, Sydney Technological Museum. *Fibres, Fabrics & Cordage 12,* 31, 33-4 (Jan. 1945). Several treatments for rotproofing jute hessian are discussed and about 20 rotproofing agents are listed (to be continued).

ROTPROOFING JUTE. L. H. Bryant & S. Smith-White, *Fibres, Fabrics & Cordage 12,* 71-4 (Feb. 1945). Exposure tests with 20 different treatments of jute hessian are reported. The reagents included Cu thiocyanate, Cu oleate with creosote, Cu acetate with tannin, basic Cu carbonate and Cu oxychloride. Some Cr salts and several other Cu compounds were also tested.

PRESERVATIVE. Frank H. Gardner (to Hercules Powder Co.). USP 2 371 884, March 20. Preserving fabrics from microbiological attack by impregnation with Cu salt of rosin and rosin oil derived from by-products formed in refining wood rosin to a paler grade.

PRESERVING TEXTILES. Alden W. Hanson and William C. Groggin (to Dow Chemical Co.). USP 2 371 618, March 20. Textile materials are preserved from microbiological attack by dusting with an organic preservative and a powdered vinylidene chloride resin, and bonding the powdered mixture to the fabric under heat and pressure.

VIII, 4. Flameproofing

FLAMEPROOF COATING. D. Cascio. Brit. P. 561 537. Flameproof coating compositions contain liquid Na (or K) silicate and pyroantimonic acid, which serves to increase the silicate ratio in the composition.

VIII, 6. Shrinkproofing

PHENOL ON WOOL. T. Barr and J. B. Speakman, Leeds Univ. *J. Textile Inst. 35,* T77-88 (July 1944). Liquid or concentrated aqueous phenol quickly shrinks wool, which then retains about ⅓ of the shrinkage even after 24 hrs. in running water. The shrinkage can, however, be set by steaming 10 min. at 102°C. in absence of acid. The chief use is thought to be in making wool crepes.

SHRINKAGE CONTROL. W. A. Dutton. *Can. Textile J. 62,* No. 2, 43-4 (Jan. 26, 1945). Shrinkage of knit goods is a complicated problem influenced by numerous factors. Use of unshrinkable yarn eliminates some of the irregularities in

shrinkproofing of knit fabric, but more attention to the knitting structure is necessary if the unshrinkable (chlorinated) yarn is used.

WOOL SHRINKAGE. C. S. Whewell, L. Rigelhaupt and A. Selim, Leeds Univ. *Nature 154,* 772 (Dec. 16, 1944). Milling shrinkage of wool is mainly due to reduced scaliness of the fibers. It is not necessary to eliminate all scaling to proof wool against shrinkage by the chlorination method.

ANTI-FELTING TREATMENT. J. G. Mason, T. E. Thompson (to Imperial Chemical Industries, Ltd.). Brit. P. 561 475. The felting tendency of wool, in any form from fiber to fabric, is diminished by treatment with an aqueous acid solution of a chlorite in presence of H_2O_2, oxalic acid or tartaric acid to react with ClO_2.

IX. TESTING AND ANALYSIS

NARROW FABRICS. Anon. *J. Textile Inst. 35,* S4-40 (Sept. 1944). Tentative Textile Standard No. 10 (tests for narrow fabrics) is presented and discussed. The proposed tests are in 4 groups: dimensions and physical properties; special characteristics, e. g. elasticity; chemical tests; color fastness.

ASTM STANDARDS ON TEXTILE MATERIALS (with Related Information). Committee D 13, A. S. T. M., Philadelphia, 1944; 473 pp.; price $2.75. Reviewed in *Silk & Rayon 19,* 103 (Jan. 1945).

IX, 1. Physical and mechanical

INERTIA ERROR. A. W. BAYES, Ashton Bros. & Co. Ltd. *J. Textile Inst. 35,* S41-59 (Nov. 1944). In tensile tests of cotton on pendulum balance testers there are cyclic errors corresponding to inertia errors mentioned in previous papers. These errors are large for weak samples with low elongation. To eliminate inertia errors by slower jaw speeds would make tests far too slow (about 5% of present jaw speeds). A correction may be applicable to Chandler bundle tests but is not practicable in other tests.

TEXTILE TESTING. H. Kennedy & J. Willock. *Fibers, Fabrics & Cordage 12,* 59-60 (Feb. 1945). The electron microscope offers a wide range of possibilities in textile testing. Another important instrument is the oscilloscope for rapid pH determination in textile processing baths. The third is the high frequency electric dryer for drying fibers (either for testing or for processing) with little or no deterioration in properties.

IX, 1a. Fibers

FIBER MATURITY. Mary A. Grimes, Texas Agricultural Experiment Station. *Textile World 95,* No. 2, 161, 163, 214, 216 (Feb. 1945). Use of polarized light in examining cotton fibers for maturity is preferable to the NaOH method. Many textile laboratories could adopt the polarized light method without any additional cost.

FIBER MICROSCOPY. T. L. W. Bailey, Jr. and Mary L. Rollins, Southern Regional Research Laboratory, USDA. *Textile Research 15,* 1-6 (Jan. 1945). Applications of microscopy in cotton research include examination of single fibers, and yarn studies after sectioning both crosswise and lengthwise. Selective staining assists in observing the effects of starch, rubber and other sizes or coatings. Photomicrographs are shown of resin penetration in fibers and yarn; penetration of rotproofing agents; effects of acetylation; and yarn relations in blended fabrics.

SHIRLASTAIN A: A FIBER IDENTIFICATION STAIN. Leaflet of Imperial Chemical Industries Ltd. London, 1944.

Reviewed in *Dyer & Textile Printer 93,* 69 (Jan. 19, 1945).

IX, 1b. Yarns

STRETCH IN ROPE. T. Wine. *Fibers, Fabrics & Cordage 12,* 69 (Feb. 1945). Figures are given for calculating the stretch of rope at various proportions of the breaking load on 3-strand manila rope, ordinary lay.

BOUND CORDAGE. Specification DTD 632, Ministry of Aircraft Production. H. M. Stationery Office, London WC2, Dec. 1944; price 7d.

IX, 1c. Fabrics; foils; films

CLOTH THICKNESS. Anon. *J. Textile Inst. 35,* S1-3 (Sept. 1944). Tentative Textile Standard No. 9, 1944 (measuring cloth thickness under loads of 1-10 psi) is presented and discussed.

GARMENTS AND HEALTH. Waldemar Schweisheimer, *Textile Colorist 67,* 579 (Jan. 1945). The capacity of clothing for reflecting or absorbing heat is mostly concerned with color. Weight and amount of clothing are also factors in comfort and ultimately in health.

HEATED GARMENTS. Anon. *Textile World 95,* No. 2, 157 (Feb. 1945). The General Electric copper man has been successfully used in laboratory testing of heated clothing for flyers and for other military purposes.

PAPER TESTER. James d'A. Clark (to Institute of Paper Chemistry). Can. P. 426 120, March 13. A tester for measuring the bursting strength of sheet material has a stretchable diaphragm, a piston operated by gas pressure and means for subjecting the diaphragm, clamped to the piston on a support, to gaseous pressure.

COTTON FABRIC, 3 oz. AND 3¾ oz. Specifications DT D583 and 633 Amendment List No. 1 for each; Ministry of Aircraft Production. H. M. Stationery Office, London WC2, Nov. 1944; price 2d. each.

COTTON WEBBING FOR SUPPLY DROPPERS. Spec-

ification DTD 695. Ministry of Aircraft Production. H. M. Stationery Office, London WC2, Dec. 1944; price 7d.

FLAX CANVAS, *14* oz. Specification DTD 642, Amendment List No. 1, Ministry of Aircraft Production. H. M. Stationery Office, London WC2, Nov. 1944; price 2d.

KNITTED FABRIC, 4 oz. Specification DTD 630, Ministry of Aircraft Production. H. M. Stationery Office, London WC2, Dec. 1944; price 7d.

SPUN SILK WEBBING. Specification DTD 660, Ministry of Aircraft Production. H. M. Stationery Office, London WC2, Dec. 1944; price 7d.

IX, 1d. Textile chemicals and dyes

FASTNESS TEST. Anon. *Can. Textile J. 62,* No. 2, 35 (Jan. 26, 1945). The quality control laboratory of the Ontario Research Foundation employs the new model FDA-R Fadeometer in testing dyed rayon for fastness to light. This new Fadeometer offers closer control than previous models.

IX, 2. Chemical

IX, 2d. Textile chemicals and dyes

SODIUM ACETATE. S. M. Nanal. *Indian Textile J. 55,* 35 (Oct. 1944). Some simple tests for Na acetate and a method for its quantitative determination are employed in connection with its use for replacing inorganic acids by acetic acid.

TEXTILE FINISH. John M. Hood (to Am. Cyanamid Co.). USP 2 371 892, March 20. A permanent finish for textiles is made from an alcohol modified melamine-aldehyde resin and a salt of a long chain alkoxypropylamine.

TEXTILE FINISHES. Am. Cyanamid Co. Brit. P. 562 575. Stable aqueous dispersions of synthetic resins for use as textile finishes are prepared from a liquid mixture of an alkyd resin (acid no. 25 or higher) and a water-insoluble alkylated melamine-formaldehyde resin, with the aid of a protein-type emulsifier.

X. WASTE RECOVERY AND UTILIZATION; WASTE PREVENTION

X, 2. Yarn and fabric wastes

LINT CATCHER. Benjamin Lev. USP 2 370 865, March 6. A lint catcher for fabric cutting machines has a blower and a lint trap arranged so that particles of fabric from near the blade are collected in the trap.

XI. CLEANSING

XI, 1. Laundering

LAUNDERING TESTS. Wm. Brown. *J. Textile Inst. 35,* P135-6 (Nov. 1944). Among laundry problems loop failure in terry towels is one which can be overcome by giving the first washing in nets to release the stretch of the ground weave and anchor the loops. The makers should wash towels in nets before marketing, since laundries cannot always tell which towels are new. Various errors in blending fibers cause laundry troubles, e. g. puckering of table linen borders when rayon yarn forms part of the border.

DETERGENT. A Nordfeldt. Brit. P. 561 542. The detergent power of peptone is such that its solution in concentrations as low as 1:30,000 are at least as efficient as soap. According to conditions washing may be effected either with a peptone solution alone or with such a solution containing no alkali but followed by an alkaline wash.

XII. HAZARDS; SAFETY PRECAUTIONS

HAZARDS. Neil Nelson, Am. Mutual Liability Insurance Co. *Textile Bull. 67,* No. 9, 18, 42 (Jan. 1, 1945). Textile mills have made much progress in eliminating hazards, but eternal vigilance is necessary and there are still many hazards such as unguarded elevator landings, oil dripping from overhead motors or shafting and other features of improper construction or maintenance.

SAFETY. Anon. *Textile World 95,* No. 2, 165, 226, 228, 230, 232 (Feb. 1945). A review of papers presented before the textile section of the National Safety Conference in Chicago.

XIII. TEXTILE MILLS

MILL MANAGEMENT. Geo. S. May, Geo. S. May Co. *Can. Textile J. 62,* No. 3, 38, 46 (Feb. 9, 1945). Basic principles inefficient mill management include sound human relations, waste elimination, plant layouts designed for operating efficiency, proper cost accounting and high quality standards.

OPERATING EFFICIENCY. D. Radhakrishnan and B. R. Rukmaji Rao. *Indian Textile J. 55,* No. 65, 100-2 (Nov. 1944). Suggestions are offered for increasing the efficiency of textile mill operations by improvements, some in human relations and some in the machine factor.

TEXTILE ENGINEERING. Earle Mauldin and T. O. Ott, Jr., Textile World. *Textile World 95,* No. 2, 117-9 (Feb. 1945). Textile mill construction now tends toward windowless plants in which light, heat and humidity are relatively easy to control. Humidification is becoming synonymous with air conditioning. Numerous improvements have been effected in power and its application, in fire protection, in handling and transporting materials and in water supply. Plans for further modernization after the war are in preparation even now.

TEXTILE IMPROVEMENTS. Anon. *Textile World 95,* No. 2, 169-70, 172, 174, 176, 178, 180, 182 (Feb. 1945). Illustrated descriptions of a preboarding machine for handling nylon hose; a de-

tector for tramp iron in textile products; a sump cleaner for removing sludge after wool scouring; a moisture detector; a sensitive scale for a wide range of weighing applications; several textile mill accessories; floor maintenance; safe cleaning of organic solvent tanks; several new textile chemicals and a variety of minor devices for improving operation of looms, cards, slashers and other items of textile machinery.

LANCASHIRE TEXTILE INDUSTRY, 1944. John Worrall Ltd., Oldham, England, 1944; price 21s. Reviewed in *Indian Textile J. 55,* 64 (Oct. 1944).

XIII, 1. Buildings

FUTURE MILLS. Anon. *Textile Age 9,* No. 2, 80, 82, 84 (Feb. 1945). Postwar mill designs are likely to consider the appearance of the plant from the air, and to improve interiors in accordance with the relatively larger proportion of women workers which may be expected. Lighting effects and acoustics will be important and improved correlation of sub-assembly units with the main production line will tend to eliminate the interlacing of processes which becomes undesirable in large mills.

RAYON MILL. Anon. *Saco-Lowell Bull. 17,* No. 1, 13-16 (Jan. 1945). Illustrated description of the new plant of Excelsior Mills at Clemson, S. C., with photographs of machinery such as spoolers and cabling twisters.

WEAVING. I. Laird, *Textile Mfr. 71,* 4-5 (Jan. 1945). Problems encountered in restarting a weaving mill after it has been closed are discussed, with particular reference to flooring and other structural features, e. g. humidity control, painting, lights and facilities for comfort and convenience of workers. Asphalt flooring is recommended for several advantages over wood, concrete and stone.

XIII, 2. Machinery

ACIDPROOF IRON. Anon. *Indian Textile J. 55,* 29 (Oct. 1944). Meldrum metal is a high silicon iron with extreme resistance to corrosion by acid. It is useful in spindles, in acid dye baths and in cradles, pipes and pipe racks used in the rayon industry.

BLENDING HOPPERS. Anon. *Textile Recorder 62,* No. 742, 40-1 (Jan. 1945). The merits and uses of mixing hoppers as employed in the mixing room in American mills are discussed. In British practice the hopper bale opener and the hopper feeder are generally combined.

COTTON MACHINERY. Anon. *Am. Wool & Cotton Reptr. 59,* No. 10, 13 (March 8, 1945). A brief review of principles governing successful operation of fly frame drives and rack or tension gears in cotton mill machinery.

COTTON PICKERS. Anon. *Mfrs. Record 114,* No. 3, 42-3, 60 (March 1945). The McCormick-Deering mechanical cotton picker, the picker invented by H. N. Berry and made by John Deere & Co., and

the Rust picker made by Allis-Chalmers have all had field trials and some pickers have been in use for several seasons. The McCormick-Deering machine uses a combination of spindles and doffers. The John Deere picker is designed largely for the semi-arid cotton areas of the Southwest where all the cotton is allowed to ripen before it is stripped.

BAG FABRIC. H. P. Claussen, Bemis Bros. Bag Co. *Textile Age 9,* No. 2, 50, 55-6, 58, 60-1 (Feb. 1945). Packaging is in a state of technological change and the source of fabrics for bags depends on a number of factors other than price. The re-use value of cotton bags tends to offset their high price, but in certain uses cotton cannot compete with either paper or burlap. Improved mechanical inventions are seriously needed in automatic machinery and would have some influence on price of bag materials.

DYE JIGGER. Anon. *Dyer & Textile Printer 92,* 497, 499 (Dec. 22, 1944); *93,* 65, 67, 69 (Jan. 19, 1945). The evolution of the dye jigger is traced by comparison between new and old designs. Substitution of iron and ceramic ware for wood was an early improvement. The trough is smaller in new designs than in the older machines.

BRAIDING MACHINE. Wilfred J. L. Wildbore (to Standard Telephones and Cables Ltd.). USP 2 370 899, March 6. Lapping and braiding machines are fitted with a device for winding multiple strands on a bobbin with equal and opposite twist imparted by a traverse member which moves along the bobbin with reciprocating traverse motion.

CRIMPING DEVICE. Am. Viscose Corp. Brit. P. 562 520. A device for crimping filaments comprises a feed mechanism with a traversing tube, an air jet for feeding tow, an apron tube receives tow and a corrugated crimping drum with reciprocating plates.

FABRIC WINDER. Cyril M. Croft, Alvin W. Bergeron and Frederick G. Dodge (to Camille Dreyfus). Can. P. 425 889, Feb. 27. A winder which passes fabric over more than one guide roll before the takeup roll has a device for causing the rotation of one end of a guide roll to be eccentric with respect to the other end.

SPINNERET. Francis C. Atwood (to National Dairy Products Corp.). USP 2 370 765, March 6. A spinneret has a semicylindrical head with suitably spaced reenforcing bands and with at least 400 perforations per sq. in. The thickness of the sheet is about twice the width of the perforations.

THREAD WINDER. John H. Garrott (to Clark Thread Co.). Can. P. 425 948-9, March 6. A machine for winding thread on a bobbin has a thread guide which moves both axially and radially with respect to the horizontal bobbin; and a thread package is made by winding on a bobbin with a tapered face, in such a way as to form a configuration like ascending rectangular steps.

YARN REEL. William J. Elvin and John B.

Steiding (to Celanese Corp. of Am.). USP 2 371 684, March 20. A reel for use in yarn treating troughs has a bracket for clamping on the trough, a bearing to hold the reel at the proper depth and to carry a shaft and beveled gear by which the reel is rotated.

XIII, 3. Power

XIII, 3b. Electric

DIELECTRIC HEATING. L. Hartshorn, Nat'l Physical Laboratory. *Textile Mfr. 71,* 37-8 (Jan. 1945). Dielectric heating has numerous potential uses in the manufacture of textiles when rapid uniform heating is needed and in cases calling for selective or localized heat. There are certain features which must be brought under control, e. g. the fact that no upper limit is imposed on the temperature rise as is the case in steam heating or oven drying.

SAVING FUEL. D. R. H. Williams. *Textile Mfr. 71,* 39-41 (Jan. 1945). Saving in electric power and in the generation and application of process heat and space heat in textile mills can result in substantial fuel economy. Even distribution of heat in mill rooms and thermostatic control of space heating are among the expedients for heat economy. Some saving in electric power cost can also be effected by the use of fluorescent lighting.

XIII, 4. Materials, handling and transport

CLOTH ROOM. Anon. *Textile World 95,* No. 2, 125, 127 (Feb. 1945). Features in the modernization of cloth room operation include synchronization of cloth shearing and folding, and continuous processing from the sewing head to the grader without lifting or hauling.

HANDLING CLOTH. H. Marsden. *Textile Mfr. 71,* 22-3, 63-5 (Jan., Feb., 1945). A comparison is made of present American and British practice in the mechanized handling of cotton cloth through various stages of processing and in the mill warehouse. Photographs show equipment for piece end sewing, brushing, automatic shearing, inspecting and take up.

OPEN ROOMS. Sorab Dinshaw, Kohinoor Mills, *Indian Textile J. 55,* 36-7 (Oct. 1944). A suitable layout is described and illustrated for the opening and mixing room of a cotton mill. The design is characterized by a pneumatic delivery system.

XIII, 6. Atmospheric control

AIR CONDITIONING. Anon. *Textile Recorder 62,* No. 742, 67, 69 (Jan. 1945). Illustrated description of a Cheetham air conditioning insulation for cotton mills and other textile factories.

SPINNING ROOM. Frederick Gunther and Marcus Gross. *Textile World 95,* No. 2, 141, 143 (Feb. 1945). Specialized work in the spinning room increases efficiency and helps to eliminate bottlenecks. Work complaints should be followed up immediately and a planned program of training should be followed. Temperature and humidity control in the spinning room should not be neglected.

XIII, 7. Process control; control instruments

ELECTRONIC INSTRUMENTS. Anon. *Saco-Lowell Bull. 17,* No. 1, 27-31 (Jan. 1945). Electronic controls and instruments now in operation in the textile industry include devices for controlling batteries of cleaning and blending feeders; lap winders; belt shippers and high speed slashers.

SLASHER CONTROL. Ernest J. Eaddy, Textile Shops. *Textile Bull. 67,* No. 10, 18, 20 (Jan. 15, 1945). A new drive for slashers is fitted with a precise tension control and is of the multimotor type (Westinghouse). The new slasher also has a recording motor meter so that stretch and moisture content are no longer dependent on the human factor.

TEXTILE STANDARDS. Henry B. Bryans, Am. Standards Assoc'n. *Textile Colorist 67,* 570-1, 589 (Jan. 1945). A lecture on textile standards as a control device for textile production.

CONTROL DEVICE. William J. Elvin and Frank W. Schulte (to Camille Dreyfus). Can. P. 425 890, Feb. 27. A device which prevents lapping of yarn on nip or feed rolls in winders has a yarn guide and a movable cutter in which a flanged collar has one flange sharpened to serve as a cutting edge for severing the yarn when a break occurs.

DRYING OVEN. J. W. Dalgleish (to Pye Ltd.). Brit. P. 562 479. Thermostatically controlled electric oven for drying or baking filaments, especially the insulating coating on electric wire, as a heated tube open at both ends through which the coated wire is passed.

ELECTRONIC SCANNER. Cramer W. LaPierre (to General Electric Co.). USP 2 371 963, March 20. A photoelectric device for continuously scanning a moving strip of material passes the strip around a tube having a straight slip for light. Inside this tube another tube having a spiral slit is rotated, the inner tube is lined with a reflecting surface and carries a photo-electric cell.

PHOTOELECTRIC INSPECTOR. British Thomson Houston Co., Ltd. Brit. P. 562 450. A photoelectric device is adapted to test the length of cloth sections between dividing transverse bands of warp yarn and equalizing them to the standard if they are not correct. It also determines if skew or bow exists in the fabric and if so makes the necessary corrections.

SPINNING BUCKET DRAINAGE. Am. Viscose Corp. Brit. P. 562 271. A device for controlling the discharge of spinning bucket drainage in spinning viscose is so arranged that drainings obtained while the crystal removing sprays are operating are not mixed with those obtained while these sprays are not operating.

XIII, 8. Water supply

WATER PURIFICATION. E. Leighton Holmes, *J. Soc. Dyers & Colorists 61,* 39-40 (Feb. 1945). Uses of ion-exchange resins in waterproofing agents are discussed with particular reference to water treatments for textile mill and dye house application. Some uses of cation exchanges and anion exchanges in water purification for textile processing, finishing and dyeing are discussed.

WATER SOFTENING. Anon. *Silk & Rayon 19,* 100 (Jan. 1945). Illustrated description of a new water softening plant utilizing lime and soda ash in a new efficient design which gives maximum results at minimum cost. A special feature is that the lime and soda ash are introduced separately into the water permitting more accurate control than hitherto.

XIV. TEXTILE RESEARCH

ARTIFICIAL FIBERS. Jacob K. Frederick, Jr., Textron, Inc. *Alumni Bull.,* Rhode Island School of Design *2,* No. 1, 8-11 (March 1945). The rapid development of artificial and synthetic fibers in the last few years is a potent reason for the support of research and education by textile companies.

COTTON RESEARCH. F. C. Toy, Shirley Institute, *Textile Weekly 60,* 62, 64, 67; 106, 108, 110; discussion 110, 113 (Jan. 12, 19, 1945). A lecture on cotton research as conducted at the Shirley Institute for the British Cotton Industry Research Assoc'n. Problems include fiber properties; fundamentals of spinning; heat insulating value of fabrics; structure and properties of cellulose; and a variety of studies relating to sizes, finishes and dyes.

DUPONT RESEARCH. E. K. Bolton, E. I. du Pont de Nemours & Co. *Ind. Eng. Chem. 37,* 107-15 (Feb. 1945). The story of du Pont research, in the Perkins medal address, describes the development of nylon, neoprene and Cellophane.

FIBER RESEARCH. W. C. Astbury. *Dyer & Textile Printer 93,* 71, 73-4 (Jan. 19, 1945). Examples of the application of science to the textile industry include x-ray examination of wool and studies in the structure and synthesis of high polymers.

FIBERS. W. T. Astbury, Leeds University. *Textile Mfr. 71,* 81-2 (Feb. 1945). Textile science is among the most fundamental of the sciences since all textile fibers were biological in origin until very recently. When the chain structure of fiber molecules was demonstrated the science offered 2 paths for research, one in the direction of investigating and exploiting the chain molecules of the natural fibers and the other in the direction of producing and utilizing synthetic chain molecules. An illustration is the progress from research on wool to the various artificial protein fibers now available.

TECHNICAL PROGRESS. C. W. Bendigo, H. E. Reed and C. Norris Rabold, Textile World. *Textile World 95,* No. 12, 110-16 (Feb. 1945). New concepts which change the aspects of textile technology have been introduced with accelerated rapidity because of war research. New machines have been developed for utilization of rayon staple and similar fibers, alone or in blends; wool blends are successfully spun on cotton textile machinery; new machines for making and finishing fabrics have been introduced; specialized driers have been designed to utilize radiant heat; numerous new textile chemicals have been brought out, and research (both private and institutional) holds promise of many additional postwar developments.

TEXTILE PROGRESS. E. J. Poole. *J. Textile Inst. 35,* P137-9 (Nov. 1944). The trend of progress in general technology and in textile technology is such that radical changes in machinery design will be needed to meet postwar demands on the textile industry. Processing improvements are also needed to gain the utmost benefit from new fibers and to utilize all service possibilities of natural fibers. Research associations should disseminate information about physical and chemical properties of all textile fibers.

TEXTILES. Milton Harris and Gypsy B. Frankenberg, Milton Harris Associates. *Chem. Eng. News 23,* 147-9 (Jan. 25, 1945). Advances in textile technology in 1944 include progress in waterproof and water-repellent fabrics, durable or temporary in water resistance according to needs; mildewproof and shrinkproof fabrics; laminates and other applications of resin bonding; new artificial and synthetic fibers, including glass, starch derivatives and others; and design as related to functional properties of textiles.

ANNUAL REPORT FOR 1942-43 (including "REPORT OF THE COLONIAL RESEARCH COMMITTEE"). Empire Cotton Growing Corp., Manchester, 1944. Reviewed in *Indian Textile J. 55,* 64-5 (Oct. 1944).

REVIEW OF DAN RIVER RESEARCH AND PATENT DIGEST. Riverside and Dan River Cotton Mills, Inc., Danville, Va., 1945; 25 pp.

REVIEW OF THE WORK OF THE EXPERIMENT STATION IN THE SEASONS 1939-40 AND 1941-42. Empire Cotton Growing Corp., 9 Kingsmere Road, Wimbledon Common, London, England, 1944; price 2s.
Reviewed in *Indian Textile J. 55,* 64 (Oct. 1944).